



1 [Public Utilities Commission 2015 Power Revenue Bonds Issuance - Not to Exceed  
2 \$48,000,000]

3 **Ordinance approving the issuance and sale of revenue bonds by the Public Utilities**  
4 **Commission of the City and County of San Francisco in an aggregate principal amount**  
5 **not to exceed \$48,000,000 to finance various capital projects consisting of**  
6 **reconstruction or replacement of existing water and/or electric power facilities**  
7 **pursuant to Charter, Section 9.107(6); and the acquisition, construction, installation,**  
8 **equipping, improvement, or rehabilitation of equipment or facilities for renewable**  
9 **energy and energy conservation pursuant to Charter, Section 9.107(8); approving the**  
10 **execution of certain documents and agreements; and confirming and making certain**  
11 **CEQA determinations and approving other actions and matters in connection**  
12 **therewith.**

13 **NOTE:** **Unchanged Code text and uncodified text** are in plain Arial font.  
14 **Additions to Codes** are in *single-underline italics Times New Roman font*.  
15 **Deletions to Codes** are in ~~italics Times New Roman font~~.  
16 **Board amendment additions** are in double-underlined Arial font.  
17 **Board amendment deletions** are in ~~Arial font~~.  
18 **Asterisks (\* \* \* \*)** indicate the omission of unchanged Code  
19 subsections or parts of tables.

20 Be it ordained by the People of the City and County of San Francisco:

21 Section 1. Findings. The Board of Supervisors (the "Board") of the City and County of  
22 San Francisco (the "City") hereby finds and declares as follows:

23 A. On November 5, 2002, the voters of the City approved Proposition E, codified as  
24 Article VIII B of the Charter of the City (the "Charter"), which among other things, authorized  
25 the Public Utilities Commission of the City and County of San Francisco (the "Commission") to  
issue 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

1 the purpose of reconstructing, replacing, expanding, repairing or improving water facilities or  
2 clean water facilities, or combinations of water and clean water facilities under the jurisdiction  
3 of the Commission; and

4 B. Pursuant to Charter Section 9.107(6), revenue bonds may be issued, without  
5 voter approval, upon a three-fourths affirmative vote of the Board, for the purpose of the  
6 reconstruction or replacement of existing water facilities and electric power facilities or  
7 combinations thereof under the jurisdiction of the Commission.

8 C. Pursuant to Charter Section 9.107(8), revenue bonds may be issued, without  
9 voter approval, upon an affirmative vote of the Board, for the purpose of the acquisition,  
10 construction, installation, equipping, improvement or rehabilitation of equipment or facilities for  
11 renewable energy and energy conservation.

12 D. By Resolution No. 14-0197 adopted by the Commission on December 9, 2014  
13 (the "Commission Bond Resolution"), the Commission has: (A) determined to and authorized  
14 the issuance of its Public Utilities Commission of the City and County of San Francisco Power  
15 Revenue Bonds in an aggregate principal amount not to exceed \$48,000,000, for the purpose  
16 of (i) financing various capital projects consisting of reconstruction or replacement of existing  
17 water and/or electric power facilities and the acquisition, construction, installation, equipping,  
18 improvement or rehabilitation of equipment or facilities for renewable energy and energy  
19 conservation (collectively, the "Capital Improvement Projects"), (ii) funding a debt service  
20 reserve account, (iii) paying capitalized interest and (iv) paying costs of issuance and other  
!1 incidental costs therefor, with the title and series designations to be determined by the  
!2 General Manager of the Commission (the "Bonds"); (B) approved the form of, and authorized  
3 the execution of (i) a Trust Indenture by and between the Commission and U.S. Bank National  
4 Association, as trustee (the "Trustee") and the First Supplemental Trust Indenture (the "First  
5 Supplement," and together with the Trust Indenture, the "Indenture"), by and between the

1 Commission and the Trustee, with respect to such Bonds, (ii) a Bond Purchase Contract  
2 relating to the sale of the Bonds, (iii) an Official Statement relating to the Bonds, and (iv) a  
3 Continuing Disclosure Certificate; (C) approved certain related actions and matters; and (D)  
4 formally requested this Board to authorize the issuance and sale of the Bonds; such  
5 Commission Bond Resolution being on file with the Clerk of the Board in File No. 150079,  
6 which is hereby declared to be a part of this Ordinance as if set forth fully herein.

7 E. Concurrently with its review of this Ordinance, the Board is being requested to  
8 review and approve an ordinance setting forth a procedure by which the Commission may  
9 issue revenue bonds for any purpose related to its Power Enterprise (the "Commission Power  
10 Enterprise Revenue Bond Law"), in compliance with which the Commission intends to issue  
11 the Bonds.

12 Section 2. Approval of the Bonds. The Board hereby approves the Commission Bond  
13 Resolution and authorizes and approves the issuance and sale by the Commission of the  
14 Bonds in an aggregate principal amount not to exceed \$48,000,000 pursuant to Charter  
15 Sections 9.107(6) and 9.107(8) and in accordance with the Commission Bond Resolution and  
16 the Commission Power Enterprise Revenue Bond Law to finance the Capital Improvement  
17 Projects in one or more series and on one or more dates, as either tax-exempt or taxable  
18 bonds or any combination thereof, at a maximum rate or rates of interest not to exceed twelve  
19 percent (12%) per annum; *provided*, that the Commission shall first have approved the form  
20 and distribution of the preliminary official statement related to the Bonds.

21 Section 3. Approval of Financing Documents. The Board hereby approves the forms of  
22 the Trust Indenture, First Supplement, Bond Purchase Contract, the preliminary Official  
23 Statement relating to the Bonds and the Continuing Disclosure Certificate, submitted to this  
24 Board and on file with the Clerk of the Board, and the appropriate officials of the Commission,  
25 as authorized in the Commission Bond Resolution (the "Authorized Commission Officials"),

1 and of the City are hereby authorized to execute and deliver each such document and  
2 agreement, with such changes thereto as the officer executing the same shall approve with  
3 the advice of the City Attorney, such approval to be conclusively evidenced by the execution  
4 and delivery thereof.

5 Section 4. Proposition P. The Board has determined, pursuant to Proposition P,  
6 approved by the voters of the City in November 2002, that the Bonds are subject to, and there  
7 is hereby incorporated by reference herein, the provisions of Section 5A.30 et seq. of Chapter  
8 V of the San Francisco Administrative Code (the "Proposition P Requirements") and that,  
9 pursuant to the Proposition P Requirements, to the extent permitted by law, one-twentieth of  
10 one percent (0.05%) of the gross proceeds of the Bonds shall be deposited in a fund  
11 established by the City Controller's Office and appropriated by the Board at the direction of  
12 the Public Utilities Revenue Bond Oversight Committee established by Proposition P  
13 Requirements to cover the costs of said Committee.

14 Section 5. Supplement to Ordinance No. 106-14. By Ordinance No. 106-14 adopted by  
15 the Board on June 24, 2014, which became effective on July 2, 2014, this Board (i) approved  
16 the issuance and sale of the Bonds to finance various capital projects of the Commission's  
17 Power Enterprise pursuant to Section 9.107(8) of the Charter, and (ii) on behalf of the  
18 Commission, declared the official intent of the Commission to reimburse the Commission with  
19 proceeds of the Bonds for Expenditures (defined therein) with respect to the Capital  
20 Improvements Projects made on and after a date no more than 60 days prior to the adoption  
21 of Ordinance No. 106-14. The Board, by this Ordinance, supplements Ordinance No. 106-14  
22 by including in the following in the definition of Capital Improvement Projects set forth therein:  
23 various capital projects consisting of reconstruction or replacement of existing water and/or  
24 electric power facilities of the Power Enterprise pursuant to Section Charter Section 9.107(6).

1           Section 6. CEQA Determinations. The San Francisco Planning Department  
2 Environmental Review Officer (ERO) on November 26, 2014, determined that seven feasibility  
3 and planning studies to be funded by the proceeds of the bonds are statutorily exempt under  
4 the California Environmental Quality Act (CEQA) Guidelines Section 15262 (Feasibility  
5 and Planning Studies), including 1.) Powerhouse Holm Unit 2 Improvements; 2.) Oil  
6 Containment Upgrade at Holm and Kirkwood Powerhouses; 3.) Moccasin Generator Step  
7 Up (GSU) Transformers & Oil Containment; 4.) Kirkwood Powerhouse Refurbishment and  
8 Two Turbin Shutoff Valves (TSOV) Replacement; 5.) Moccasin Switchyard Upgrade;  
9 6.) Regulatory Compliance for Transmission Lines-; Repair and replacement of  
10 equipment and facilities at various locations; and 7. ) Switchyard/Substations  
11 Rehabilitation (Warnerville sw ph 1). The ERO also concurred with the determination  
12 that the following three projects are categorical exemptions under CEQA, and  
13 construction of these projects is proposed to be funded by the proceeds of the bonds:  
14 Moccasin Generator Rewind on November 4, 2014; Transmission Lines/Distribution  
15 System Moccasin to Warnerville (Don Pedro Crossing) on November 24, 2014; and  
16 Powerhouse SCADA Upgrade; on November 24, 2014. The Commission has reserved its  
17 right to add, change or modify the proposed projects to be funded by bond  
18 proceeds as it deems to be necessary and advisable, subject to the limitations and  
19 conditions set forth in the Indenture, Bond Purchase Contract and Charter Sections  
20 9.107(6) and 9.107(8), in compliance with CEQA, and in consultation with the City  
21 Attorney. The Board hereby adopts the determinations by the Commission as if set forth in full  
22 herein.

23           Section 7. General Authority. The City Controller, Treasurer, the City Attorney and such  
24 other appropriate officers of the City, and their duly authorized deputies and agents and  
25 Authorized Commission Officials are hereby authorized and directed, jointly and severally, to

1 take such actions as are necessary or desirable to facilitate the issuance, sale and delivery of  
2 the Bonds and to otherwise accomplish the intents and purposes of this Ordinance, in  
3 consultation with the City Attorney, including but not limited to the execution and delivery of  
4 such other documents and agreements as they may deem necessary or advisable.

5 Section 8. Ratification of Prior Actions. All actions authorized and directed by this  
6 Ordinance and heretofore taken are hereby ratified, approved and confirmed by this Board.

7 Section 9. File Documents. All documents referred to as on file with the Clerk of the  
8 Board are in File No. 150079

9 Section 10. Effective Date. Pursuant to Charter Section 2.105, this Ordinance shall  
10 become effective immediately on the date of its adoption.

11  
12 APPROVED AS TO FORM:  
13 DENNIS J. HERRERA, City Attorney

14  
15 By:   
16 MARK D. BLAKE  
Deputy City Attorney

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**LEGISLATIVE DIGEST**  
**(SUBSTITUTED 03032015)**

**[Public Utilities Commission 2015 Power Revenue Bonds Issuance-Not to Exceed \$48,000,000]**

**Ordinance approving the issuance and sale of revenue bonds by the Public Utilities Commission of the City and County of San Francisco in an aggregate principal amount not to exceed \$48,000,000 to finance various capital projects consisting of reconstruction or replacement of existing water and/or electric power facilities pursuant to Charter, Section 9.107(6); and the acquisition, construction, installation, equipping, improvement, or rehabilitation of equipment or facilities for renewable energy and energy conservation pursuant to Charter, Section 9.107(8); approving the execution of certain documents and agreements; and confirming and making certain CEQA determinations and approving other actions and matters in connection therewith.**

Existing Law

This is new legislation.

Background Information

The proposed Ordinance authorizes the issuance by the SFPUC of its power enterprise revenue bonds (the "Power Revenue Bonds") in an amount not to exceed \$48,000,000 to finance the costs of various capital water projects benefitting the SFPUC Power Enterprise. The Power Revenue Bonds will be issued pursuant to Charter sections 9.107(6) and 9.107(8), at a maximum rate of 12% per annum. The Ordinance delegates to the SFPUC the authority to determine the timing, amount and manner of sale of Power Revenue Bonds (i.e., competitive or negotiated), subject to the SFPUC approving the form of a substantially final offering document.

The proposed Ordinance also approves security and disclosure documents for the Bonds including the form Trust Indenture, First Supplement, Bond Purchase Contract, preliminary Official Statement and the Continuing Disclosure Certificate.

Upon issuance of the Bonds, to the extent permitted by law, one-twentieth of one percent (0.05%) of the gross proceeds of the Bonds will be deposited in a fund established by the City Controller's Office and appropriated by the Board at the direction of the Public Utilities Revenue Bond Oversight Committee established by Proposition P.



**Items 4 and 5**  
**Files 15-0078 and 150079**

**Department:**  
 Public Utilities Commission (PUC)

## EXECUTIVE SUMMARY

### Legislative Objectives

- File 15-0078: Ordinance amending the Administrative Code to add Chapter 43, Article XIV, Sections 43.14.1 through 43.14.9, to provide procedures for the issuance of Power Revenue Bonds by the San Francisco Public Utilities Commission (SFPUC).
- File 15-0079: Ordinance approving the issuance and sale of revenue bonds by the SFPUC in an amount not to exceed \$48,000,000 to finance various capital projects pursuant to Charter Section 9.107(6) and Section 9.107(8); approving certain documents/agreements; making California Environmental Quality Act determinations and other actions.

### Key Points

- On February 10, 2015, the SFPUC approved a 10-year Capital Plan which includes \$760 million for power projects, including \$550,000,000 of funding from power revenue bonds. On June 24, 2014, the Board of Supervisors approved the SFPUC's capital budget for FY 2014-15 and FY 2015-16 and authorized the SFPUC to issue up to \$112,346,843 of power revenue bonds. To date the SFPUC has not issued any SFPUC Power revenue bonds.

### Fiscal Impact

- Total estimated debt service over the 30-year term of the bonds at 4.2% annual interest is \$87,072,605, consisting of \$48,000,000 in principal and \$39,072,605 in interest. The estimated average annual debt service payment is approximately \$2,900,000.
- Debt service payments will be covered by Power Enterprise revenues from the sale of electricity. The City's General Fund departments currently pay a subsidized rate of \$.0575/kWH, which will increase by \$.01/kWH in FY 2015-16. All SFPUC's power rates are projected to increase to cover the actual costs of service, including debt service for power revenue bonds. In FY 2014-15, SFPUC estimated the City's General Fund departments received \$20 million of subsidized electric power rates.

### Policy Consideration

- File 15-0078 authorizes the SFPUC to refund bonds by resolution of the SFPUC, without Board of Supervisors approval, provided the refunding bonds achieve debt service savings.

### Recommendations

- Except for the provisions to authorize the SFPUC refunding bonds without further approval by the Board of Supervisors, which the Budget and Legislative Analyst considers to be a policy decision, approve the proposed ordinances.
- Approval of Section 43.14.6 in File 15-0078 to allow the SFPUC to authorize bonds to be refunded without approval of the Board of Supervisors is a policy decision for the Board of Supervisors. If the Board of Supervisors wants to delegate such authority to the SFPUC, the proposed ordinance should be amended to specify a net present value debt service savings threshold of at least 3% of the refunded bonds, consistent with City debt policy.

**MANDATE STATEMENT / BACKGROUND**

According to Charter Section 9.107(6) and 9.107(8), the Board of Supervisors is authorized to provide for the issuance of revenue bonds without voter approval if:

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 Public Utilities Commission, when authorized by resolution adopted by a three-fourths affirmative vote of the Board of Supervisors; and/or

Issued for the purpose of acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation.

Charter Section 5A.31(d) states that 1/20th of one percent from the proceeds of each issuance or sale of public utility revenue bonds must be set aside for use by the Public Utilities Commission Revenue Bond Oversight Committee to cover the costs of Committee activities.

Charter Appendix F1.113 states that 0.2 percent of the bond expenditures net of bond financing and auditing costs be allocated to support the Controller's Audit Fund.

**Background**

Since the construction of the Hetch Hetchy Project in 1918, the San Francisco Public Utilities Commission (SFPUC) has been responsible for providing water and electricity to Bay Area and San Francisco customers and the Modesto and Turlock Irrigation Districts<sup>1</sup>. Currently, the Hetch Hetchy Project delivers water to approximately 2.6 million Bay Area residents and generates an average of 1.6 million megawatts (MWh) of clean renewable electricity annually.

In 2005, the SFPUC reorganized and created a Power Enterprise, functionally and financially separate from the SFPUC's existing Water Enterprise and Wastewater Enterprise. The Power Enterprise is responsible for generating, scheduling, purchasing, selling, transmitting and distributing electricity to meet the needs of approximately 2,416 retail and wholesale customers. SFPUC Power Enterprise customers include: (a) all City municipal departments, including City Hall, police and fire stations, City hospitals, Moscone Convention Center, MUNI, the Airport, public housing, and all City streetlights and traffic signals; (b) tenants in City-owned properties, including the Port and Airport; and (c) tenants in the Hunters Point Shipyard Phase I redevelopment project, Treasure Island and Transbay Transit Center.

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<sup>1</sup> The PUC has provided electricity to these two State irrigation districts since the 1920s in accordance with the terms of the Federal Raker Act, which granted the City rights of way over federal lands in Yosemite National Park, Stanislaus National Forest and other public lands to construct and operate the Hetch Hetchy Project, to provide water to the Bay Area and generate hydroelectricity as part of the City's water delivery operations.

Electricity is generated through three large hydroelectric powerhouses located in Tuolumne County: (1) Holm Powerhouse, (2) Kirkwood Powerhouse and (3) Moccasin Powerhouse and then delivered through distribution and transmission lines and switchyards and substations. Most of the SFPUC's existing powerhouses, and electrical distribution and transmission systems have been in operation since the 1960s or earlier and are nearing the end of their useful lives, requiring significant capital investment, rebuild and improvements to maintain ongoing operations. The SFPUC's electric power sales must generate sufficient revenues to fund the Power Enterprise's operating expenses while funding capital investments.

To fund these long term capital improvements, on May 13, 2014, the SFPUC approved a 10-year Capital Plan which included \$748 million for power capital projects. On February 10, 2015, the SFPUC approved an updated 10-year Capital Plan (FY 2015-16 through FY 2024-25) which calls for \$760 million for power capital projects. Of the currently identified \$760 million for power capital projects, the current 10-year Capital Plan identifies \$198 million of annual ongoing power revenues, \$12 million from Cap and Trade Auction revenues and \$550 million from debt funding through the issuance of power revenue bonds.

On June 24, 2014, the Board of Supervisors approved the SFPUC's capital budget for FY 2014-15 and FY 2015-16 with the following two ordinances:

- File 14-0482: ordinance authorizing the issuance and sale of SFPUC power revenue bonds for up to \$112,346,843 to finance various SFPUC Power Enterprise capital projects; and
- File 14-0480: supplemental ordinance appropriating \$217,478,836 of Hetch Hetchy revenues, Cap and Trade allowances and Power and Water Revenue Bonds for the SFPUC's Hetch Hetchy Capital Improvement Program, including \$105,878,198 in FY 2014-15 and \$111,600,638 in FY 2015-16, and placing \$173,755,378 of bond funded proceeds on Controller's reserve by project, subject to SFPUC and Board of Supervisors' approval of the California Environmental Quality Act (CEQA) requirements and receipt of proceeds of indebtedness and loan funds.

Although the ordinance under File 14-0482 authorized the SFPUC to issue and sell up to \$112,346,843 of power revenue bonds and the supplemental appropriation ordinance (File 14-0480) specified \$43,004,314 of Power Enterprise revenue bonds and \$15,099,665 of reappropriated Hetchy Power revenue bonds as sources of funding, to date the SFPUC has not issued any SFPUC Power revenue bonds.

## DETAILS OF PROPOSED LEGISLATION

File 15-0078: The proposed ordinance amends the Administrative Code to add Chapter 43, Article XIV, Sections 43.14.1 through 43.14.9 to provide procedures for the issuance of Power Revenue Bonds by the SFPUC.

**File 15-0079:** The proposed ordinance approves the issuance and sale of power revenue bonds by the SFPUC in an aggregate principal amount not to exceed \$48,000,000 to finance various capital projects consisting of reconstruction or replacement of existing water and/or electric power facilities pursuant to Charter Section 9.107(6) and the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation pursuant to Charter Section 9.107(8); approving the execution of certain documents and agreements; confirming and making certain California Environmental Quality Act (CEQA) determinations and approving other actions and matters in connection therewith, as defined herein.

**Amendments to the Administrative Code (File 15-0078)**

Under the proposed ordinance, the City's Administrative Code would be amended to specify the procedures for the SFPUC to separately issue and sell power revenue bonds payable from and secured by the SFPUC's Power Enterprise revenues. Specifically, the proposed ordinance identifies the definitions, procedures for issuance, financing and refinancing of capital improvements, repairs, improvements and replacements for the SFPUC's Power Enterprise. The interest rates on SFPUC Power Enterprise bonds could be fixed or variable, sold through competitive or negotiated sale, with other terms, methods of sale, reserves, debt service coverage and credit agreements and validity of bond actions, to be authorized by future SFPUC Commission determination. The SFPUC could also authorize refunding bonds, without further Board of Supervisors approval, provided such refunding bonds achieve debt service savings as provided in City Administrative Code Article VI, Chapter 43 (see Policy Consideration below).

The proposed ordinance specifies that such power revenue bonds would be limited obligations of the SFPUC and would not constitute general indebtedness to the City subject to repayment by the City's taxing power or through the City's General Fund. Under the proposed ordinance, the SFPUC's Power Enterprise would be defined as the City's electric utility system which provides electric power and related services to the City and its departments, including that portion of the Hetch Hetchy Project that is allocated to power generation, transmission and distribution facilities and related facilities. The SFPUC's Power Enterprise Revenues, which would be obligated for the repayments of the power revenue bonds, would specifically mean the revenues, rates and charges received and accrued by the SFPUC for electric power and energy services. Therefore, this ordinance commits the SFPUC to set sufficient rates and charges for electricity to repay the debt service on the power revenue bonds, including appropriate reserves and debt service coverage and requirements.

**Issuance and Sale of up to \$48,000,000 of Power Revenue Bonds (File 15-0079)**

Under the proposed ordinance, the SFPUC would be authorized to issue the first Power Enterprise Revenue Bonds for up to \$48,000,000 to finance various capital projects that specifically benefit the SFPUC's Power Enterprise in accordance with Charter Section 9.107(6) and 9.107(8). This ordinance limits these power revenue bonds to a maximum 12% annual interest rate, specifies the funding of a debt service reserve account, payment of capitalized interest and the costs of issuance and related costs. This ordinance also approves the security and disclosure documents, including the Master Trust Indenture, First Supplemental Trust Indenture, Bond Purchase Contract, preliminary Official Statement and the Continuing

Disclosure Certificate. In addition, this ordinance confirms the CEQA determinations for the specified projects to be funded with the bond proceeds.

### **Descriptions of Nine Capital Projects**

The SFPUC is proposing to fund the following nine capital projects with the proceeds from the up to \$48,000,000 of Power Revenue bonds, including the first three projects through construction and the following six projects through detailed feasibility and planning studies:

1. Moccasin Hydropower Generator Project – Units 1 and 2 of Moccasin Powerhouse, the hydroelectric generating units, are almost 40 years old and have exceeded their useful life. This project will fund a comprehensive evaluation of the existing conditions, preparation of design specifications, technical assistance, manufacture and installation of components, construction and construction management oversight.
2. Transmission Lines/Distribution System: Moccasin to Warnerville (Don Pedro Reservoir Crossing) – Rehabilitation of transmission and distribution lines and facilities used for hydroelectric power to improve reliability and address the North American Electric Reliability Corporation (NERC) requirements. Transmission projects will include replacement of insulators, switches, towers, groundings, and protective and regulatory requirements. Distribution projects will include over 50 miles of lines, related equipment, substations, disconnect switches, breakers and metering.
3. Hydropower Powerhouse Control Upgrade – Replace existing power control and monitoring system with an upgraded multifunctional digital solution which meets current regulatory requirements and provides diagnostic functions and reduced maintenance requirements.
4. Other Hydropower Powerhouse Projects – Conduct feasibility and planning study for powerhouse upgrades, renewal and replacement, specifically at Holm Powerhouse Generator Unit 2.
5. Switchyard/Substation Rehabilitation (Warnerville Switchyard Phase 1) – Conduct feasibility and planning study at Warnerville Switchyard for renewal and replacement of switchyard and substation components for hydropower transmission, including regulatory grading, fencing and grounding protection.
6. Oil Containment Upgrade at Holm and Kirkwood Powerhouses – Conduct feasibility and planning study to upgrade oil separation systems in the Holm and Kirkwood Powerhouses to prevent oil discharges.
7. Moccasin Generator Step Up Transformers and Oil Containment – Conduct feasibility and planning study for replacement of transformers in Moccasin Powerhouse to improve efficiency and increase power generation.
8. Refurbish Kirkwood Powerhouse and Replace two Turbine Shutoff Valves – Conduct feasibility and planning study to rehabilitate Kirkwood Powerhouse hydroelectric facilities to increase their life expectancy.
9. Moccasin Hydropower Switchyard Upgrade – Conduct feasibility and planning study for renewal and replacement of switchyard and substation components at Moccasin Switchyard for hydropower transmission.

In November 2014, the Planning Department determined that the three construction projects noted above are categorically exempt and the six feasibility and planning studies noted above are statutorily exempt under the California Environmental Quality Act (CEQA), as specified in the subject ordinance (File 15-0079).

**Details on the Requested up to \$48 Million Issuance**

According to Mr. Michael Brown of the SFPUC’s Financial Services Division, the entire requested up to \$48,000,000 bond issuance is anticipated in the spring of 2015 and would be a negotiated, rather than a competitive bid sale. Mr. Brown advises that the SFPUC is recommending a negotiated sale because the proposed power revenue bonds would be the first bond sale for the Power Enterprise, which requires additional outreach and marketing to bond investors unfamiliar with this new issuer. Mr. Brown advises that if these power bonds were sold on a competitive basis, the SFPUC would not expect to obtain the lowest cost.

A portion of the proposed 2015 SFPUC power revenue bonds may be designated and sold as “Green Bonds” a new bond market designation that identifies these bonds as funding projects that result in 100% greenhouse gas-free electricity, and that are environmentally beneficial projects to interested investors. Mr. Brown advises that of the total not-to-exceed \$48,000,000 power revenue bonds, approximately \$30 million would be tax-exempt Green Bonds and the remaining \$18 million would be tax-exempt conventional bonds.

Mr. Brown reports that to select a bond underwriter, the SFPUC sent a Request for Proposal (RFP) to the Controller’s Office of Public Finance pre-qualified pool of 25 underwriter firms, to which nine firms responded. The SFPUC and its financial advisors evaluated the nine proposals. Based on the proposals, the SFPUC has selected Wells Fargo Securities as the underwriter for this transaction, as noted in the proposed \$48,000,000 issuance ordinance (File 15-0079).

**FISCAL IMPACT**

Table 1 below shows estimated total project costs of \$37,300,000 for the nine capital power projects summarized above.

**Table 1: Estimated Nine SFPUC Power Project Costs**

<u>Projects</u>	<u>Cost</u>
Moccasin Hydropower Generator Rewind Project	\$24,000,000
Transmission Lines/Distribution System: Moccasin to Warnerville	5,000,000
Hydropower Powerhouse Control Upgrade	1,700,000
Other Hydropower Powerhouse Projects	1,000,000
Switchyard/Substation Rehabilitation	1,500,000
Oil Containment Upgrade at Holm and Kirkwood	1,000,000
Moccasin Generator Step Up Transformers and Oil Containment	1,000,000
Refurbish Kirkwood Powerhouse & Replace Turbine Shutoff Valves	1,500,000
Moccasin Hydropower Switchyard Upgrade	600,000
<b>Total Estimated Project Costs</b>	<b>\$37,300,000</b>

Pursuant to Charter Appendix F1.113, 0.2% of the expenditure budget net of bond financing and audit costs is to be allocated and available to support the Controller's Audit Fund. In accordance with Proposition P approved by San Francisco voters in November 2002, 1/20<sup>th</sup> of 1% (.05%) of the bonds' gross proceeds will be expended for the Revenue Bond Oversight Committee activities. Table 2 below shows the total estimated SFPUC Power Project Costs of \$37,300,000 and the related bond financing, City Services Auditor and the Revenue Bond Oversight Committee costs including a contingency that result in the total estimated \$48,000,000 revenue bond cost.

**Table 2: Total Up to \$48,000,000 Estimated Bond Costs**

Total Project Costs	\$37,300,000
Capitalized Interest	6,000,000
Debt Service Reserve	3,200,000
Bond disclosure counsel & financial advisors	800,000
Contingency	628,000
City Services Auditor Fee	48,000
Revenue Bond Oversight Fee	24,000
<b>Total Estimated Costs</b>	<b>\$48,000,000</b>

#### **Estimated Debt Service**

According to Mr. Brown, the estimated annual interest rate for the bond payments will be 4.2%. Total estimated debt service over the 30-year term of the bonds at 4.2% annual interest is \$87,072,605, consisting of \$48,000,000 in principal and \$39,072,605 in interest to fund the above-noted \$37,300,000 in project costs. The estimated average annual debt service payment is approximately \$2,900,000.

#### **Electricity Rate Increases Needed to Cover Debt Service**

Debt service payments will be covered by SFPUC's Power Enterprise revenues from the sale of electricity. The electricity rate charged to the City's enterprise departments and other non-General Fund agencies is currently \$.1449/kWH, which is equivalent to the Pacific Gas and Electric (PG&E) power rates. This rate is scheduled to increase by 3% annually starting in FY 2015-16 based on the projected changes to PG&E's rates.

Most of the City's General Fund departments currently pay a subsidized rate of \$.0575/kWH, which will increase by \$.01/kWH in FY 2015-16, and is currently projected to increase by \$.005/kWH annually thereafter. Other City agencies, including the hospitals, libraries, Moscone Convention Center, public buildings and street-lights pay various higher and lower electric rates to the SFPUC, based on prior negotiations with the Mayor's Office. Table 3 below shows the different rates paid by various City departments.

**Table 3: FY 2014-15 and FY 2015-16 City Electric Rates Charged by the SFPUC**

	FY 2014-15 Adopted Rates <sup>(1)</sup>	FY 2015-16 Adopted Rates <sup>(1)</sup>
General Fund Departments and Related Customers	5.75 ¢/kWh	6.75 ¢/kWh
Public Libraries	9.13 ¢/kWh	10.13 ¢/kWh
Moscone Convention Center Facilities	7.78 ¢/kWh	8.80 ¢/kWh
San Francisco General Hospital	2.70 ¢/kWh	3.70 ¢/kWh
Laguna Honda Hospital	3.49 ¢/kWh	4.49 ¢/kWh
Public Buildings & City Street Lights	2.00 ¢/kWh	3.00 ¢/kWh
Enterprise Departments (tied to PG&E rates)	14.49 ¢/kWh	15.50 ¢/kWh

<sup>(1)</sup> Adopted by the SFPUC.

As noted above, the proposed ordinance (File 15-0078) commits the SFPUC to set sufficient rates and charges for electricity to repay the debt service, including those rates and charges paid by City departments through the City's annual budget process. According to Mr. Brown, all of the City's power rates are projected to gradually rise to cover the actual costs of service, including debt service for the SFPUC's power revenue bonds and required reserve accounts, in accordance with the SFPUC's 10-year financial plan. For FY 2014-15, the SFPUC estimated that the City's General Fund would incur approximately \$20 million of additional costs to fully fund the City's subsidized electric power rates.

In accordance with Charter Section 8B.125, the SFPUC is responsible for setting the rates, fees and other charges for the sale of electricity. The SFPUC's action on all rates, fees and charges is subject to rejection, within 30 days of submission, by resolution of the Board of Supervisors. If the Board of Supervisors does not act within 30 days, the SFPUC proposed rates become effective without further Board of Supervisors action.

#### **Prior Board of Supervisors Authorization for SFPUC Power Revenue Bonds**

As discussed above, in 2014, the Board of Supervisors authorized the issuance and sale of SFPUC power revenue bonds for up to \$112,346,843 to finance various SFPUC Power Enterprise capital projects (File 14-0482). If the Board of Supervisors approves the proposed ordinance (File 15-0079) to issue and sell up to \$48,000,000 of SFPUC power revenue bonds, the SFPUC would have a remaining authorization to issue and sell up to \$64,346,843 of SFPUC power revenue bonds.



**POLICY CONSIDERATION**

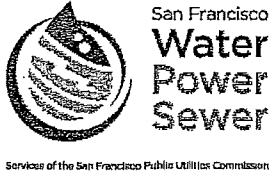
As noted above, under the proposed ordinance (File 15-0078), the SFPUC could authorize SFPUC refunding bonds, by resolution approved by the SFPUC, without further Board of Supervisors approval, provided such refunding bonds achieve debt service savings as provided in City Administrative Code Article VI, Chapter 43. These provisions would be codified as a new Section 43.14.6 in the City's Administrative Code. Currently, the SFPUC cannot authorize the refunding of Water or Wastewater revenue bonds, without approval of the Board of Supervisors.

Section 43.8.4 of the City's Administrative Code currently specifies that the Board of Supervisors is only authorized to provide for the issuance of refunding general obligation, revenue or lease revenue bonds which provide net debt service savings to the City on a present value basis calculated in provisions of general State law or by other ordinance of the Board of Supervisors. Net debt service savings are calculated by comparing the present value of the aggregate debt service on the refunding bonds to that of the refunded bonds as of the date of the refunding bonds using an assumed rate of interest equal to the yield on the refunding bonds. According to Ms. Nadia Sesay, the Director of the Controller's Office of Public Finance, the City's standard debt policy currently defines such net debt service savings as a minimum of 3%. However, the subject ordinance does not specify a net debt service savings that must be achieved by the SFPUC for such refunding.

Therefore, approval of this provision to allow the SFPUC to authorize revenue bonds to be refunded, without subsequent approval of the Board of Supervisors is a policy decision for the Board of Supervisors. If the Board of Supervisors wants to delegate such authority to the SFPUC, without subsequent approval by the Board of Supervisors, the proposed ordinance should be amended to specify a net present value savings threshold of at least 3% of debt service on the refunded bonds, consistent with existing City debt policy.

**RECOMMENDATIONS**

1. Except for the provisions to authorize the SFPUC refunding bonds without further approval by the Board of Supervisors, which the Budget and Legislative Analyst considers to be a policy decision, approve the proposed ordinances.
2. Approval of Section 43.14.6 in File 15-0078 to allow the SFPUC to authorize bonds to be refunded without approval of the Board of Supervisors is a policy decision for the Board of Supervisors. If the Board of Supervisors wants to delegate such authority to the SFPUC, the proposed ordinance should be amended to specify a net present value debt service savings threshold of at least 3% of the refunded bonds, consistent with City debt policy.



**AGENDA ITEM**  
**Public Utilities Commission**  
 City and County of San Francisco



DEPARTMENT Financial Services AGENDA NO. 14  
 MEETING DATE December 9, 2014

**Commercial Paper Credit Agreements: Regular Calendar**  
**Project Manager: Charles Perl**

**Authorize Establishment of Power Enterprise Debt Program and Inaugural Revenue Bond Issuance to Fund A Not-To-Exceed Amount of \$48M, Inclusive of Financing Costs, of Previously Approved Capital Projects.**

<p><b>Summary of Proposed Commission Action:</b></p>	<p><b>Authorize</b> the General Manager of the San Francisco Public Utilities Commission (SFPUC) to establish a revenue bond debt program for the Power Enterprise and issue the Power Enterprise’s inaugural revenue bonds to fund a not-to-exceed principal amount of \$48M, inclusive of financing costs, for projects included in the Capital Improvement Plan, subject to approval from the Board of Supervisors; <b>Authorize</b> the General Manager to sell in one or more series of bonds, on either a competitive or negotiated basis, as the General Manager determines is in the best financial interest of the SFPUC; delegating to the General Manager authorization to award each series of bonds to the highest bidder (lowest cost) bank or underwriter(s); authorizing the General Manager to submit ordinances to the Board of Supervisors 1) Authorizing the establishment of a new Power Bond program and 2) Authorizing issuance of not-to-exceed \$48 million aggregate principal amount of new money Power Revenue Bonds. This is an Approval Action pursuant to Administrative Code Chapter 31.</p>
<p><b>Background and Description of Scope of Services:</b></p>	<p><b>Background:</b> The Power Enterprise has relied primarily on revenues to fund capital improvements. To address significant needed repairs to its aging infrastructure, the Commission and Board adopted capital budgets of \$75.8 million in FY 2014-15 and \$73.6 million in FY 2015-16, and propose to use revenue bonds of \$33.9 million and \$54.6 million as a funding source in each year, respectively. Additionally, the Ten-Year Capital Plan includes \$555.4 million of proposed revenue bond financing for the Power Enterprise. The proposed bond issuance will fund approximately \$38.1 million in projects over the next 2-3 years and will be used to repair or replace critical upcountry infrastructure.</p>

**APPROVAL:**

COMMISSION  
SECRETARY

Donna Hood

**Execute Agreement:** Authorize Establishment of Power Enterprise Debt Program and Inaugural Revenue Bond Issuance to Fund A Not-To-Exceed Amount of \$48M, Inclusive of Financing Costs, of Previously Approved Capital Projects

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***Projects Funded from Series 2015A Power Bonds:***

The projects to be included for funding from the proceeds of the Series 2015A Power Bonds are further described in the approved Capital Improvement Plan. Specific projects approved for bond funding fall under two categories: (1) three projects with funding through construction, and (2) seven activities with funding approved only through the planning and design phases. Bond funds could be used for construction of those or other projects included within the Capital Improvement Plan, subject to Commission approval following completion of environmental review. The following are brief descriptions of the proposed projects:

Projects with funding through construction:

a) Moccasin Powerhouse Generator Rewind Project

The project is for the rewind of Moccasin Powerhouse Units 1 and 2 which are approximately forty years old and have exceeded their life expectancy.

b) Transmission Lines/Distribution System: Moccasin to Warnerville (Don Pedro Reservoir Crossing)

The project includes the rehabilitation of certain facilities used for the transmission and distribution of hydroelectric power. It will include reliability projects, as well as projects to address North American Electric Reliability Corporation (NERC) requirements.

c) Powerhouse SCADA Upgrade:

The current SCADA system has limitations and the SFPUC has experienced many stability issues. The system will be replaced with a solution that allows the SFPUC to meet regulatory obligations.

Feasibility and planning studies with funding approved only through planning and design phases,:

a) Regulatory Compliance for Transmission Lines: repair and replacement of equipment and facilities at various locations

This feasibility and planning study will address operational and safety conditions requiring repair or replacement of equipment and facilities at a number of locations. This activity is being undertaken to comply with applicable code requirements specified in the National Electrical Safety Code (NESC) and federal and State Occupational Safety and Health Administration (OSHA) standards.

b) Other Powerhouse Projects: Holm Unit 2

This activity provides funding for feasibility and planning study for powerhouse upgrade, renewal and replacement projects, including upgrades to the Holm Powerhouse Generator Unit 2.

c) Switchyard/Substation Rehabilitation (Warnerville Switchyard Phase 1)

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This feasibility and planning study is intended to address major renewal and replacement of substation components associated with Bank 2 and Bank 3 of the substation. Design and feasibility analysis for the substation will also include grading, fencing and grounding protection to current regulatory standards.

d) Oil Containment Upgrade at Holm & Kirkwood Powerhouses

This feasibility and planning study will involve planning and feasibility analysis for upgrades to the oil separation systems within the Holm and Kirkwood Powerhouses to prevent oil discharges.

e) Moccasin Generator Step Up (GSU) Transformers & Oil Containment

This feasibility and planning study will be conducted for replacement of existing transformers within Moccasin Powerhouse. This will slightly improve the efficiency of the unit, minimally increasing the annual generation from the Powerhouse.

f) Kirkwood Powerhouse Refurbishment & Two Turbine Shutoff Valves (TSOV) Replacement

This feasibility and planning study will be conducted for the rehabilitation of Kirkwood Powerhouse to increase its life expectancy.

g) Moccasin Switchyard Upgrade

This feasibility and planning study will be undertaken to provide for the renewal and replacement of switchyard and substation components at Moccasin Switchyard for hydropower transmission.

The Commission may add, change or modify the proposed projects to be funded by bond proceeds as it deems to be necessary and advisable, subject to the limitations and conditions set forth in the Indenture, Bond Purchase Contract and Charter Sections 9.107(6) and 9.107(8), in compliance with CEQA, and in consultation with the City Attorney and Bond Counsel.

**Green Bonds Designation:** The 2015A Power Bonds are to be designated and sold as "Green Bonds". This will be the first issuance of Green Bonds by the SFPUC, and is a relatively new bond market designation that serves to identify to interested investors the opportunity to invest in environmentally beneficial projects. As such, the SFPUC will self-certify that the 2015A Power Bonds will fund Hetch Hetchy power-related projects that generate 100% greenhouse gas-free electricity, thereby qualifying the Bonds as Green Bonds. It is anticipated that as the Green Bonds market continues to grow, it will broaden the investor community for the SFPUC's bonds.

**Negotiated Sale Recommended:** This transaction is proposed to be a negotiated sale as it has been determined to be the optimal method of sale to ensure the best savings for ratepayers given the terms and conditions of the sale, the market, and the fact that Power is a new credit unfamiliar to bond investors. The 2015 A Bonds represents the inaugural bond sale for the Power Enterprise and therefore will benefit from the additional investor outreach and targeting that is more easily accomplished through a negotiated sale. Although

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interest rates remain near historically low levels, the bond market is ever changing. The underwriter, as well as our Financial Advisors, will advise on the most appropriate timing of the sale to obtain the lowest interest rates.

As a further safeguard, the SFPUC will retain an independent pricing agent who will advise and certify that the underwriter has provided the most advantageous pricing results at the time of sale. This strategy was effectively used for the SFPUC's last negotiated sales of the Water Series 2012 D Refunding Series and the Wastewater 2013 A Refunding Series.

**Underwriter Selection:** A competitive selection process was undertaken to select an underwriter. A Request for Proposals was sent to 25 firms in the City's Underwriter Pool, with 9 proposals received. A formal, comprehensive evaluation process was undertaken by the SFPUC and its financial advisors to score and rank the proposals. Evaluation criteria included: sales distribution capabilities, plan of marketing/sale, past SFPUC support/coverage, and fees. The SFPUC and its financial advisors independently ranked the firms and Wells Fargo Securities received the highest score and is being recommended to be underwriter on this transaction.

**Bond Documents:** The Commission is being asked to approve the form of and authorize the execution of documents relating to the bond sale. These documents are described below.

1) Master Trust Indenture and First Supplemental Indenture – The Indenture is the bond document providing both the legal structure and security for the bonds, including pledge of revenues, covenants, default and remedy provisions, flow of funds (priority for use of pledged revenues) and provisions to issue additional debt. The Supplemental Indentures set forth the terms of each individual series of bonds, including maturities, interest rates and terms of early redemption.

Issuing bonds through a public offering required the creation of a Master Trust indenture (MTI), which is the agreement between the SFPUC and its bond investors. Power's Master Trust Indenture is similar to those of Water and Wastewater Enterprises, and requires rates and charges be set at sufficient levels to meet debt service obligations. All existing programs and services are incorporated into the MTI, including GoSolarSF, energy efficiency projects, etc. Future programs outside of the Power Enterprise's current services and scope would be considered a "Separate System" under the MTI and would require separate revenues for funding.

In addition, the MTI establishes a flow of funds for the Power Enterprise and delineates that revenues be used in the following order:

- I. Operations & Maintenance, including power purchases and labor
- II. Debt Service, used to fund priority, eligible projects
- III. Debt Service Coverage Reserves at 1.25x
- IV. Other spending

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The table below compares the proposed MTI for Power to the existing MTI's for the Water and Wastewater Enterprises.

	Existing Water Indenture	Existing Wastewater Indenture	Proposed Power Indenture
Net Revenues	Revenues less O&M and any Priority R&R Fund Deposit	Same	Same
Operating & Maintenance	Costs of the proper operation, maintenance and repair of the Enterprise	Same	Same
Rate Covenant	Maintain rates such that Net Revenues plus Available Funds are at least: 1.25x; Net Revenues only: 1.00x DSC	Same	Same
Additional Bonds Test	Net Revenues plus Available Funds: are at least 1.25x; Net Revenues only: 1.00x DSC	Same	Same
Debt Service Reserve Fund	At SFPUC's option, currently no Reserve Fund required	Same	100% Max Annual Debt Service (MADS)*

\*Can be reduced or eliminated once Power credit is well-established

- 2) Official Statements (Preliminary/Final) – Primary disclosure document for bidders, rating agencies, and investors regarding terms of bonds, security, risk factors, financial and operating results and projections and background information. The document is substantially final (except for certain pricing information and updates that may occur prior to sale) and through this resolution the General Manager is permitted to make such changes as are necessary to update the document.
- 3) Continuing Disclosure Certificate – Document containing commitments to providing annual financial and operating data disclosure, and interim disclosure in the event of certain enumerated events, for the benefit of bondholders.
- 4) Bond Purchase Contract – In the event that the bonds need to be sold on a negotiated basis, the document between the SFPUC and the underwriter(s) providing the terms of the bond sale.

SFPUC Finance staff has analyzed the capital requirements of the Power Enterprise, financing alternatives, and determined that the issuance of bonds at this time would be advantageous to meet anticipated contract award dates and construction schedules, in a cost-effective manner and promote ratepayer affordability. SFPUC Finance worked collaboratively with outside financial

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	<p>advisors, as well as the City Attorney's Office and outside bond and disclosure counsel, to develop all aspects of the documents associated with the sale of Power Revenue Bonds, including all attachments. The individuals and firms working with the SFPUC on this financing are as follows:</p> <ul style="list-style-type: none"> <li>• City Attorney of the City and County of San Francisco</li> <li>• Disclosure Counsel: Orrick, Herrington &amp; Sutcliffe LLP</li> <li>• Co-Bond Counsel: Orrick, Herrington &amp; Sutcliffe LLP and Curls Bartling P.C.</li> <li>• Co-Financial Advisors: PFM and Kitahata &amp; Company</li> </ul>
<b>Result of Inaction:</b>	A delay in approval would result in a possible delay in capital project construction because financing through the revenue bonds would not be available.
<b>Budget &amp; Costs:</b>	Funding: The Power Enterprise Capital Program budget and appropriation covers these associated financing costs.
<b>Schedule:</b>	After Board and approval by the Commission of bond sale documents, a Power Bonds issuance is anticipated in early 2015.
<b>Recommendation:</b>	SFPUC staff recommends that the Commission adopt the attached resolution.
<b>Environmental Review:</b>	<p>On November 24, 2014, the Environmental Review Officer determined that the 2015 Power Enterprise Bond Sale is statutorily exempt under the CEQA Guidelines Section 15262(Feasibility and Planning Studies). Seven feasibility and planning activities are included in this statutory exemption:</p> <ul style="list-style-type: none"> <li>▪ Powerhouse Holm Unit 2 Improvements</li> <li>• Oil Containment Upgrade at Holm &amp; Kirkwood Powerhouses</li> <li>• Moccasin Generator Step Up (GSU) Transformers &amp; Oil Containment</li> <li>• Kirkwood Powerhouse Refurbishment &amp; Two Turbin Shutoff Valves (TSOV) Replacement</li> <li>• Moccasin Switchyard Upgrade</li> <li>• Regulatory Compliance for Transmission Lines-; Repair and replacement of equipment and facilities at various locations</li> <li>• Switchyard/Substations Rehabilitation (Warnerville sw ph 1)</li> </ul> <p>The ERO also concurred with three categorical exemptions for the following projects:</p> <ul style="list-style-type: none"> <li>▪ Moccasin Generator Rewind; under CEQA Guidelines Section 15301 (Existing Facilities); Case Number: 2014.1184ENW; November 4, 2014</li> </ul>

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	<ul style="list-style-type: none"> <li>• Transmission Lines/Distribution System Moccasin to Warnerville (Don Pedro Crossing); under CEQA Guidelines Section 15302 (Replacement or Reconstruction); Case Number 2014-002073 ENV; November 24, 2014</li> <li>• Powerhouse SCADA Upgrade; under CEQA Guidelines Section 15301 (Existing Facilities); Case Number 2014-002112ENV; November 26, 2014.</li> </ul> <p>The statutory exemption and the categorical exemptions are attached.</p>
<p><b>Attachments:</b></p>	<ol style="list-style-type: none"> <li>1. SFPUC Resolution – Approval of Bond Authorization</li> <li>2. Power Bonds Presentation</li> <li>3. Form of Board of Supervisors Ordinance Establishing new Power Bond Program and link between setting and collecting rates and the repayment of debt service</li> <li>4. Form of Board of Supervisors Ordinance Approving the Master Trust Indenture &amp; bond documents and authorizing the sale of bonds</li> <li>5. Form of Preliminary Official Statement (POS) and Form of Continuing Disclosure Certificate (Appendix of POS)</li> <li>6. Form of Master Trust Indenture</li> <li>7. Form of Supplemental Trust Indenture</li> <li>8. Form of Bond Purchase Agreement</li> <li>9. 2015 Power Enterprise Bond Sale CEQA Statutory Exemption</li> <li>10. Moccasin Generator Rewind Categorical Exemption</li> <li>11. Transmission Lines/Distribution System Moccasin to Warnerville (Don Pedro Crossing) Categorical Exemption</li> <li>12. Powerhouse SCADA Upgrade Categorical Exemption</li> </ol>



**1. PUBLIC UTILITIES COMMISSION**  
City and County of San Francisco

**RESOLUTION NO.: 14-0197**

WHEREAS, On November 5, 2002, the voters of the City and County of San Francisco (the "City") approved Proposition E, codified as Article VIII B of the Charter of the City (the "Charter"), which among other things, authorized Public Utilities Commission ("the Commission") to issue 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 or clean water facilities, or combinations of water and clean water facilities under the jurisdiction of the Commission; and

WHEREAS, Section 9.107(6) of the Charter ("Charter") of the City and County of San Francisco (the "City") authorizes the issuance of revenue bonds, without voter approval, when authorized by resolution approved by a three-fourths affirmative vote of the Board of Supervisors of the City (the "Board"), 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 of the City and County of San Francisco (the "Commission"); and

WHEREAS, Charter Section 9.107(8) authorizes the issuance of revenue bonds, without voter approval, upon an affirmative vote of the Board, for the purpose of the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation; and

WHEREAS, The Commission has determined to issue one or more series of revenue bonds under the authority of Charter Sections 9.107(6) and 9.107(8) to finance various capital projects consisting of reconstruction or replacement of existing water facilities or electric power facilities and the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation (collectively, the "Capital Improvement Projects") in an aggregate principal amount not to exceed \$48,000,000 (the "Bonds") pursuant to a Trust Indenture (the "Trust Indenture"), and a First Supplemental Trust Indenture, each by and between the Commission and a trustee to be selected by the General Manager pursuant to a competitive procurement process and in accordance with City's policies and procedures relating thereto (the "Trustee") (the "First Supplement," and together with the Trust Indenture, the "Indenture"); and

WHEREAS, Such Bonds will be sold in a negotiated sale pursuant to a Bond Purchase Contract (the "Bond Purchase Contract"); and

WHEREAS, A preliminary official statement has been prepared for the Bonds (the "Preliminary Official Statement") (the "Official Statement") be used in connection with the offering and sale of the Bonds of each series from time to time; and

WHEREAS, A continuing disclosure certificate (the "Continuing Disclosure Certificate") will be executed and delivered with respect to the Bonds in order to assist the underwriters thereof in complying with Securities and Exchange Commission Rule 15c2-12 ("Rule 15c2-12"); and

WHEREAS, The Commission has examined the proposed forms of the Trust Indenture, the First Supplement, the Bond Purchase Contract, the Preliminary Official Statement and the Continuing Disclosure Certificate; and

WHEREAS, On November 26, 2014, the Environmental Review Officer determined that seven feasibility and planning studies to be funded by the 2015 Power Enterprise Bond Sale are statutorily exempt under the California Environmental Quality Act (CEQA) Guidelines Section 15262 (Feasibility and Planning Studies), including 1.) Powerhouse Holm Unit 2 Improvements; 2.) Oil Containment Upgrade at Holm & Kirkwood Powerhouses; 3.) Moccasin Generator Step Up (GSU) Transformers & Oil Containment; 4.) Kirkwood Powerhouse Refurbishment & Two Turbin Shutoff Valves (TSOV) Replacement; 5.) Moccasin Switchyard Upgrade; 6.) Regulatory Compliance for Transmission Lines-; Repair and replacement of equipment and facilities at various locations; and 7.) Switchyard/Substations Rehabilitation (Warnerville sw ph 1); and

WHEREAS, The ERO concurred with the determination that the following three projects are categorical exemptions under CEQA , and construction of these projects is proposed to be funded by this Bond Sale: Moccasin Generator Rewind on November 4, 2014; Transmission Lines/Distribution System Moccasin to Warnerville (Don Pedro Crossing); on November 24, 2014; and Powerhouse SCADA Upgrade; on November 24, 2014; and

WHEREAS, Subject to the further approval of the Board, the Commission is duly empowered, pursuant to each and every requirement of law, to authorize the foregoing transactions, to issue the Bonds and to authorize the execution and delivery of the Trust Indenture, the First Supplement, the Bond Purchase Contract, the Preliminary Official Statement, the Continuing Disclosure Certificate and related documents for the purposes, in the manner and upon the terms provided herein; and

WHEREAS, Subject to Commission adoption of this resolution, the General Manager is authorized and directed to request the Board to adopt an Ordinance approving the documents herein mentioned related to the Bonds and authorizing the preparation and distribution by the Commission of a Preliminary Official Statement and an Official Statement relating to the Bonds and an Ordinance approving procedures and broader authorization for the issue and sale of power revenue bonds by the Commission; and

WHEREAS, The voters of the City approved Proposition P in November 2002, to which this resolution and the Bonds are subject, constituting Section 5A.30 et seq. of Chapter V of the San Francisco Administrative Code (the "Proposition P Requirements"), including the requirement that, to the extent permitted by law, one-twentieth of one percent (0.05%) of the gross proceeds of the Bonds shall be deposited in a fund established by the Office of the Controller of the City (the "Controller's Office") and

appropriated by the Board at the direction of the Public Utilities Revenue Bond Oversight Committee to cover the costs of said committee; now, therefore, be it

RESOLVED by the Public Utilities Commission of the City and County of San Francisco, as follows:

Section 1. Issuance of the Bonds. The issuance of the Bonds, in one or more series and on one or more dates, in an aggregate principal amount not to exceed \$48,000,000, pursuant to Charter Sections 9.107(6) and 9.107(8), is hereby authorized and approved by the Commission, subject to Board approval, and subject to the limitations and conditions provided herein. The Bonds shall be issued for the purpose of providing funds to: (a) finance the Capital Improvement Projects in such amounts as shall be determined by the General Manager; (b) fund a debt service reserve account for the Bonds; (c) pay capitalized interest on the Bonds; and (d) pay the costs of issuance of the Bonds.

The Bonds shall be issued in accordance with this resolution, the Indenture and the Charter. The General Manager is hereby authorized and directed to determine the aggregate principal amount of Bonds to be issued from time to time (subject to the maximum amount and further limitations and conditions set forth herein) and to determine the various titles and series designations of the Bonds.

Section 2. Sale of the Bonds. The sale of the Bonds by negotiated sale, in one or more series and on one or more dates, is hereby authorized and approved by the Commission, subject to Board approval pursuant to the Charter and subject to the limitations and conditions provided herein. The Commission hereby finds and determines, based on advice from the General Manager and his consultation with Public Financial Management, Inc. and Kitahata & Company, the financial advisors to the Commission with respect to the Bonds (together, the "Financial Advisors"), that (i) the sale of the Bonds through a negotiated process is likely to enhance the ability of the Commission to timely sell the Bonds or to achieve a lower overall cost to the Commission, or both, and (ii) the requirements of Section VIII of the Commission's Debt Management Policies and Procedures have been satisfied. The stated interest rate or rates on the Bonds shall not exceed twelve percent (12%) per annum; the final maturity of any Bonds shall not be later than forty (40) years after the issue date thereof; and any such Bonds shall not be issued and delivered after December 31, 2019.

Section 3. Trust Indenture, First Supplement and Bonds. The proposed forms of the Trust Indenture and the First Supplement and of the Bonds submitted to this Commission, and the terms and conditions thereof, are hereby approved. The President or General Manager of the Commission or their designees are authorized and directed to execute and deliver, and the Secretary of the Commission is authorized to attest to, the Trust Indenture, the First Supplement and the Bonds in the forms presented at this meeting and on file with the Secretary of the Commission, with such changes and additions thereto as they may approve upon consultation with the Financial Advisors and the City Attorney, such approval to be conclusively evidenced by their execution and delivery thereof. The Secretary of the Commission is directed to file a copy of the forms

of the Trust Indenture and the First Supplemental (which includes the proposed form of the Bonds) with the minutes of this meeting. Subject to the further limitations hereof, the principal amount, date, maturity date or dates, maximum interest rate or rates, series designation, interest payment dates, forms, registration privileges, place or places of payment, terms of redemption, insurance provisions and other terms of the Bonds shall be as provided in the Indenture.

Section 4. Negotiated Sale; Bond Purchase Contract. The General Manager is hereby authorized to select and appoint one or more underwriters (each, an "Underwriter" and, collectively, the "Underwriters") from the Commission's or the City's pool of pre-qualified underwriters subject to a competitive procurement process and in accordance with the City's policies and procedures with respect thereto, subject to the limits on underwriter compensation set forth below. The General Manager is hereby authorized and directed, for and on behalf of and in the name of the Commission, to sell at one or more negotiated sales, Bonds in such aggregate principal amount as the General Manager may determine, subject to the further limitations and conditions hereof. The General Manager is hereby authorized to enter into a Bond Purchase Contract with one or more of the Underwriters, individually or collectively as the General Manager deems appropriate, substantially in the form presented at this meeting and on file with the Secretary of the Commission, with such changes and additions as the General Manager may approve upon consultation with the City Attorney, such approval to be evidenced conclusively by the execution and delivery of such Bond Purchase Contract; provided, however, that the total compensation to the Underwriter(s) shall not exceed 0.50% of the par value of the Bonds.

Section 5. Approval of the Preliminary Official Statement. The Preliminary Official Statement, in substantially the form submitted to the Commission, is hereby approved. The General Manager of the Commission is hereby authorized to certify from time to time, for and on behalf of the Commission, that the Preliminary Official Statement, with such changes, additions and supplements as he may deem necessary or appropriate in the interest of the Commission, in consultation with the City Attorney, is deemed final as of its date, within the meaning of Securities and Exchange Commission Rule 15c2-12 (except for the omission of certain final pricing, rating and related information as permitted by Rule 15c2-12). The Preliminary Official Statement is hereby authorized to be used from time to time in connection with the marketing of the Bonds. In connection with the sale of all or a portion of the Bonds, the General Manager is hereby authorized and directed, for and on behalf of the Commission, to execute an Official Statement for any such Bonds in substantially the form of the Preliminary Official Statement, and to cause the delivery of such Official Statement to the underwriters of such Bonds.

Section 6. Continuing Disclosure Certificate. The proposed form of Continuing Disclosure Certificate for the Bonds submitted to this Commission and on file with the Secretary of the Commission is hereby approved. The General Manager is hereby authorized and directed to execute the Continuing Disclosure Certificate for the Bonds from time to time, substantially in the form submitted to this Commission, with such additions, changes and corrections thereto as the General Manager shall approve with the

advice of the City Attorney, such approval to be conclusively evidenced by the execution and delivery of such Continuing Disclosure Certificate. The Secretary of the Commission is directed to file a copy of said form of Continuing Disclosure Certificate with the minutes of this meeting.

Section 7. Submittal to Board for Approval. The General Manager, for, in the name of and on behalf of the Commission, is hereby authorized and directed to seek authorization and approval from the Board with respect to the issuance and sale of the Bonds and the execution and delivery of the Trust Indenture, the First Supplement, the Bond Purchase Contract, the Continuing Disclosure Certificate and the Preliminary Official Statement, as may be required by the Charter.

Section 8. Proposition P. Pursuant to the Proposition P Requirements, to the extent permitted by law, one-twentieth of one percent (0.05%) of the gross proceeds of the Bonds shall be deposited in a fund established by the Controller's Office and appropriated by the Board at the direction of the Public Utilities Revenue Bond Oversight Committee to cover the costs of said committee.

CEQA Findings. The San Francisco Planning Department Environmental Review Officer (ERO) on November 26, 2014, determined that seven feasibility and planning studies to be funded by the proceeds of the bonds are statutorily exempt under the California Environmental Quality Act (CEQA) Guidelines Section 15262 (Feasibility and Planning Studies), including 1.) Powerhouse Holm Unit 2 Improvements; 2.) Oil Containment Upgrade at Holm & Kirkwood Powerhouses; 3.) Moccasin Generator Step Up (GSU) Transformers & Oil Containment; 4.) Kirkwood Powerhouse Refurbishment & Two Turbin Shutoff Valves (TSOV) Replacement; 5.) Moccasin Switchyard Upgrade; 6.) Regulatory Compliance for Transmission Lines-; Repair and replacement of equipment and facilities at various locations; and 7.) Switchyard/Substations Rehabilitation (Warnerville sw ph 1). The ERO also concurred with the determination that the following three projects are categorical exemptions under CEQA, and construction of these projects is proposed to be funded by the proceeds of the bonds: Moccasin Generator Rewind on November 4, 2014; Transmission Lines/Distribution System Moccasin to Warnerville (Don Pedro Crossing) on November 24, 2014; and Powerhouse SCADA Upgrade; on November 24, 2014. The Commission reserves to its discretion the right to add, change or modify the proposed projects to be funded by bond proceeds as it deems to be necessary and advisable, subject to the limitations and conditions set forth in the Indenture, Bond Purchase Contract and Charter Sections 9.107(6) and 9.107(8), in compliance with CEQA, and in consultation with the City Attorney and Bond Counsel.

Section 9. General Authority. The General Manager, the Deputy General Manager and Chief Operating Officer and the Assistant General Manager, Business Services and Chief Financial Officer, of the Commission are hereby authorized and directed, each acting alone, for, in the name and on behalf of this Commission, to execute and deliver any and all documents, certificates and agreements, including but not limited to documents or agreements for municipal bond insurance for all or a portion of the

Bonds or for one or more debt service reserve surety bonds or insurance policies for the Bonds if determined by the General Manager, in consultation with the City Attorney and the Financial Advisors, to be beneficial to the Commission and to do any and all things and take any and all actions which may be necessary or advisable, in their discretion, to accomplish the intents and purposes of this resolution, including the issuance and sale of the Bonds, the financing of the Capital Improvement Projects, and the other actions which the Commission has approved in this resolution. The General Manager is hereby authorized to delegate any of the responsibilities or duties set forth in this resolution to the Deputy General Manager and Chief Operating Officer or to the Assistant General Manager, Business Services and Chief Financial Officer, of the Commission. The other officers of the Commission are hereby authorized to delegate any of the actions on their behalf set forth herein to another officer or employee of the Commission.

Section 10. Ratification. All actions heretofore taken by the officers, employees and agents of the Commission with respect to the authorization, sale and issuance of the Bonds, prior to the date hereof and in accordance with the provisions hereof, are hereby ratified, approved and confirmed.

Section 11. Effective Date. This resolution shall take effect from and after its adoption.

PASSED AND ADOPTED on December 9, 2014, by the following vote:

AYES: 4 (Four)

NOES: 0 (Zero)

ABSENT: 0 (Zero)

---

President of the Public Utilities Commission  
of the City and County of San Francisco

[Seal]

Attest:

---

Secretary of the Public Utilities Commission  
of the City and County of San Francisco

APPROVED AS TO FORM:

DENNIS J. HERRERA, City Attorney

By: \_\_\_\_\_  
Mark D. Blake  
Deputy City Attorney

**CERTIFICATE OF SECRETARY**

I, Donna Hood, Secretary of the Public Utilities Commission of the City and County of San Francisco, hereby certify that the foregoing is a full, true and correct copy of Resolution No.: 14-0197 duly adopted at the regular meeting of the Public Utilities Commission, duly and regularly held on December 9, 2014, of which meeting all of the members of said Commission had due notice.

I further certify that at least 72 hours prior to such meeting I caused to be delivered to the Documents Department of the San Francisco Public Library two copies of the agenda for such meeting to be posted immediately upon receipt by such Department at the place designated by the City Librarian for the posting of agenda in the central public library, which place is accessible to the public in accordance with Section 8.16 of the Administrative Code of the City and County of San Francisco, and that a brief description of such resolution appeared as an item on such agenda.

I further certify that I have carefully compared the foregoing copy with the original minutes of said meeting on file and of record in my office; that said copy is a full, true and correct copy of the original resolution adopted at said meeting and entered in said minutes; and that said resolution has not been amended, modified or rescinded in any manner since the date of its adoption, and the same is now in full force and effect.

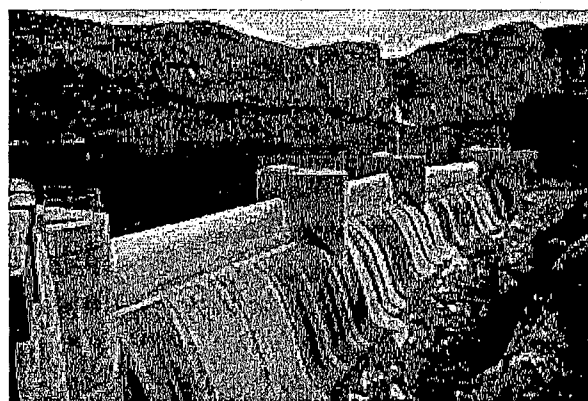
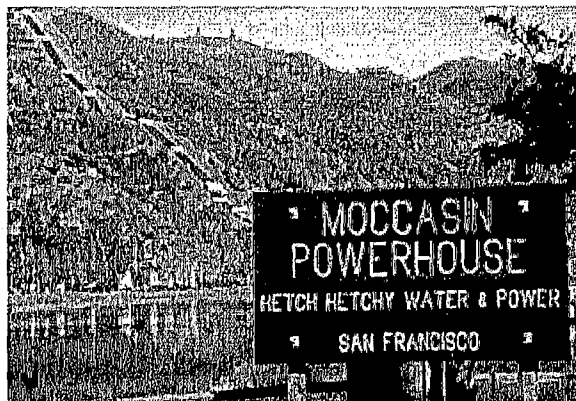
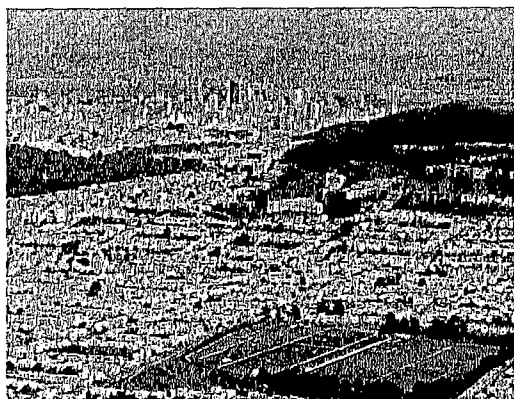
IN WITNESS WHEREOF, I have executed this certificate and affixed the seal of the Public Utilities Commission of the City and County of San Francisco thereto this 9th day of December, 2014.

---

Donna Hood  
Secretary of the Public Utilities Commission  
of the City and County of San Francisco

[SEAL]





# Establishing Power Revenue Bond Program & Inaugural Approval

December 9, 2014

**Charles Perl, Deputy CFO  
Business and Financial Services**



# Power Bond Effort to Date...

Services of the San Francisco Public Utilities Commission

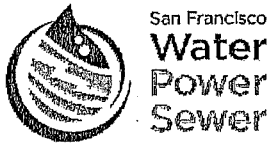
- Need to clearly define revenue pledge to repay bonds
  - ◆ Hetchy Water & Power Financial statements separated
  - ◆ Rate setting process clarified
  - ◆ Capital/financial plans, rates and projected debt all separate
- Rating Agency presentations over summer indicated strong indicative ratings for new Power Revenue Pledge & Credit



# Balanced Long-Term Planning

Services of the San Francisco Public Utilities Commission

- Two-Year Budget, 10-Year Financial/Capital Plans Balanced
  - ◆ \$748M Capital Plan assumed \$555M in power bonds
  - ◆ \$193M Revenue-funded and other sources
  - ◆ Provides funding for upcountry and in-City projects



# Hetch Hetchy Water & Power Enterprise 10-Year Capital Plan

Services of the San Francisco Public Utilities Commission

<b>SFPUC: Hetch Hetchy Water and Power</b>							Capital Plan
Program/Project (Thousands)	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020-24	10 YR Total FY 2015-24
<b>SPENDING PLAN</b>							
<b>Hetchy Power</b>							
Streetlight	5,050	5,550	3,050	3,050	3,050	19,250	29,000
Transmission/Distribution	1,000	1,250	0	0	0	0	2,250
Renewable/Generation	6,200	6,200	3,200	3,200	1,200	6,000	26,000
Energy Efficiency	1,000	1,000	1,000	1,000	1,000	5,000	10,000
Treasure Island	3,050	2,950	9,600	4,950	2,100	6,300	28,950
Power Infrastructure	25,798	18,048	13,675	17,950	16,725	28,894	121,080
Joint Projects - Power 55%	14,532	18,700	25,392	29,269	24,568	339,947	452,408
New Projects - Up-country Power	10,210	13,530	7,945	3,770	1,960	1,200	38,615
New Projects - Streetlights/Redevelopment	9,020	6,396	2,684	6,684	6,660	8,606	40,050
<b>Hetchy Power Total</b>	<b>75,860</b>	<b>73,624</b>	<b>66,546</b>	<b>69,873</b>	<b>57,263</b>	<b>405,197</b>	<b>748,363</b>
<b>Hetchy Water</b>							
Water Infrastructure	19,100	2,000	8,600	8,600	8,600	43,000	89,900
Joint Projects - Water 45%	11,890	15,300	20,775	23,948	20,101	278,138	370,152
New Projects - Water	720	1,960	1,880	1,135	23,905	4,375	33,975
<b>Hetchy Water Total</b>	<b>31,710</b>	<b>19,260</b>	<b>31,255</b>	<b>33,683</b>	<b>52,606</b>	<b>325,513</b>	<b>494,027</b>
<b>TOTAL</b>	<b>107,570</b>	<b>92,884</b>	<b>97,801</b>	<b>103,556</b>	<b>109,869</b>	<b>730,710</b>	<b>1,242,390</b>
<b>REVENUES</b>							
Power Bonds-55% Joint Assets	33,890	54,570	44,681	45,840	34,627	341,817	555,424
Water Bonds-Water Only & 45% Joint Assets	31,710	19,260	31,255	33,683	52,606	325,513	494,027
Revenue	23,252	17,354	19,841	21,644	19,832	60,366	162,288
Cap and Trade Auction Revenue	1,418	1,700	2,025	2,390	2,804	3,014	13,351
Project De-Obligation	17,300	0	0	0	0	0	17,300
<b>TOTAL</b>	<b>107,570</b>	<b>92,884</b>	<b>97,801</b>	<b>103,556</b>	<b>109,869</b>	<b>730,710</b>	<b>1,242,390</b>
Total San Francisco Jobs/Year	960	829	872	924	980	6,518	11,082
<b>Surplus/Shortfall</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>

Projects financed  
with Series 2014A  
Power Bond  
Proceeds

530

**Balanced**



# Power Revenue Bond Program

Services of the San Francisco Public Utilities Commission

- Est. \$45M sale early 2015 to fund critical upcountry hydropower facility projects
  - ◆ \$29.2M – powerhouse/ generator projects
  - ◆ \$5.8M – transmission line/distribution systems
  - ◆ \$3.1M – switchyard/substation/transformer projects
- Also funds financing costs- Capitalized Interest, Reserve Fund, Costs of Issuance
- Future commercial paper program being developed for interim financing of FY16 projects, including streetlights

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# First SFPUC “Green Bonds” Issuance

Services of the San Francisco Public Utilities Commission

- New credit market designation identifying investment opportunity in environmentally beneficial projects
- SFPUC will self-certify that Bonds will fund HH power-related projects that generate 100% GHG-free electricity
- Broadens investor community for SFPUC bonds

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# Power Bond Indenture Similar to Water and Wastewater

Services of the San Francisco Public Utilities Commission

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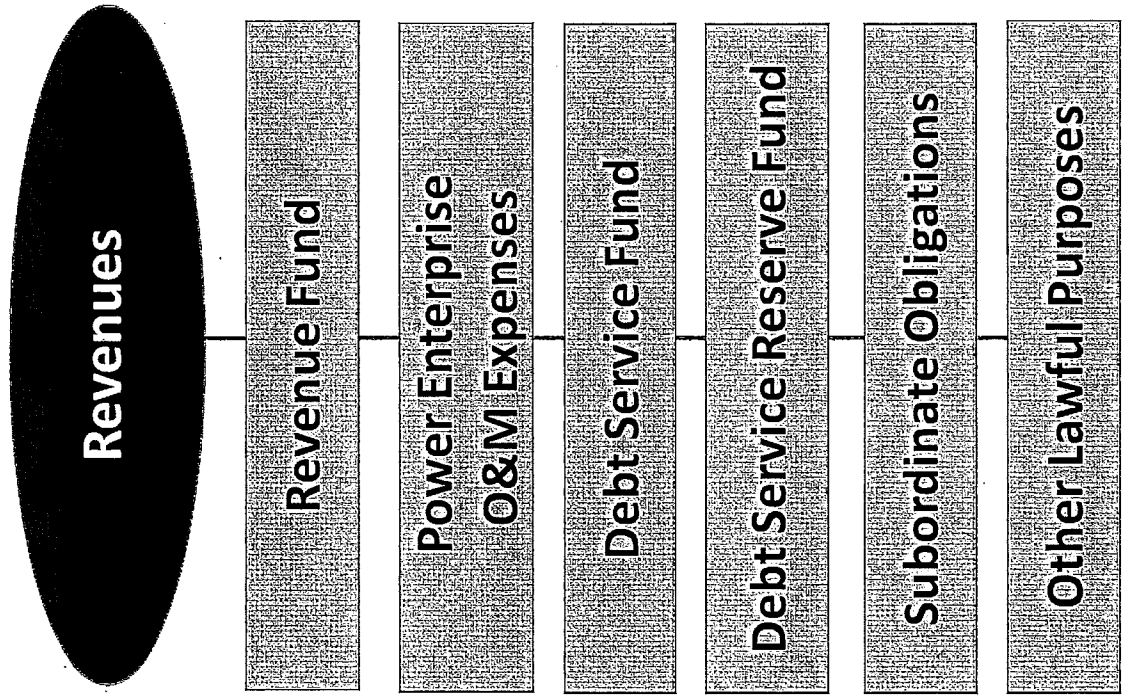
	<b>Water Indenture</b>	<b>Wastewater Indenture</b>	<b>Proposed Power Indenture</b>
<b>Net Revenues</b>	<b>Revenues less O&amp;M and any Priority R&amp;R Fund Deposit</b>	<b>Same</b>	<b>Same</b>
<b>O&amp;M</b>	<b>Costs of the proper operation, maintenance and repair of the Enterprise</b>	<b>Same</b>	<b>Same</b>
<b>Rate Covenant</b>	<b>Maintain rates such that Net Revenues plus Available Funds are at least: 1.25x; Net Revenues only: 1.00x DSC</b>	<b>Same</b>	<b>Same</b>
<b>Additional Bonds Test</b>	<b>Net Revenues plus Available Funds are at least: 1.25x; Net Revenues only: 1.00x DSC</b>	<b>Same</b>	<b>Same</b>
<b>Debt Service Reserve Fund</b>	<b>At SFPUC's option, currently no Reserve Fund required</b>	<b>Same</b>	<b>100% Max Annual Debt Service (MADS)*</b>

\*Series 2015A Power Bonds will include a reserve fund, but future bond series might not



# Flow of Funds - Same as Water and Wastewater

Services of the San Francisco Public Utilities Commission







# Future Policy Impacts

Services of the San Francisco Public Utilities Commission

- All existing power programs and services included as a part of Power Revenue Pledge
- Standard “Separate System” Indenture definition included to describe any possible future expansion outside of current service/ scope
  - ◆ Credit markets require this for revenue pledge
  - ◆ Separate System would need to have dedicated revenues to cover costs

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# Forms of Agreement Needing Approval...

Services of the San Francisco Public Utilities Commission

1. SFPUC Resolution – Bond Authorization
2. Board of Supervisor Ordinance Establishing new Power Bond Program; links rate setting to debt service needs
3. Board of Supervisor Ordinance Approving Master Trust Indenture, Bond Documents & Authorizing Bond Sale
4. Master Trust Indenture & First Supplemental
5. Preliminary Official Statement
6. Continuing Disclosure Certificate
7. Bond Purchase Contract with Wells Fargo



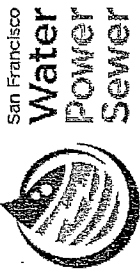
# Next Steps and Future Actions

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Services of the San Francisco Public Utilities Commission

- December 2014, Commission Action and BOS Ordinances introduced
- Jan/Feb 2015, Board of Supervisors considers Ordinances
- Late March 2015, Inaugural Power Bond sale

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Services of the San Francisco Public Utilities Commission

# Questions?

This Preliminary Official Statement and the information contained herein are subject to completion and amendment. Under no circumstances shall this Preliminary Official Statement constitute an offer to sell, the solicitation of an offer to buy, nor shall there be any sale of these securities, in any jurisdiction in which such offer, solicitation or sale would be unlawful prior to the registration or qualification under the securities laws of such jurisdiction.

NEW ISSUE—Book-Entry Only

Ratings:  
S&P: “\_\_\_”  
Fitch: “\_\_\_”  
(see “RATINGS”)

*In the opinion of Orrick, Herrington & Sutcliffe LLP, San Francisco, California, and Curis Bartling P.C., Oakland, California, Co-Bond Counsel to the SFPUC, based upon an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the 2015 Series A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986 and is exempt from the State of California personal income taxes. In the further opinion of Co-Bond Counsel, interest on the 2015 Series A Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Co-Bond Counsel observe that such interest is included in adjusted current earnings when calculating corporate alternative minimum taxable income. Co-Bond Counsel express no opinion regarding any other tax consequences related to the ownership or disposition of, or the amount, accrual or receipt of interest on, the 2015 Series A Bonds. See TAX MATTERS.*



\$45,000,000\*  
Public Utilities Commission  
of the City and County of San Francisco  
Power Revenue Bonds,  
2015 Series A (Green Bonds)

Dated: Date of Delivery

Due: As shown on inside front cover

The Public Utilities Commission of the City and County of San Francisco (the “SFPUC”) is issuing its Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A (Green Bonds) (the “2015 Series A Bonds”), pursuant to authority granted by Sections 9.107(6) and 9.107(8) of the Charter of the City and County of San Francisco (the “City”) and a First Supplemental Trust Indenture, dated as of March 1, 2015, by and between the SFPUC and \_\_\_\_\_, as trustee (the “Trustee”), which supplements a Trust Indenture, dated as of March 1, 2015 (collectively, the “Indenture”), by and between the SFPUC and the Trustee.

The 2015 Series A Bonds are being issued to finance reconstruction or replacement of existing facilities of the SFPUC’s Hetch Hetchy Project and energy conservation projects, to fund capitalized interest on the 2015 Series A Bonds, to fund a debt service reserve account for the 2015 Series A Bonds and to pay costs of issuance of the 2015 Series A Bonds.

The 2015 Series A 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 rates set forth on the inside cover page of this Official Statement. Interest on the 2015 Series A Bonds is payable semiannually on \_\_\_\_\_ 1 and \_\_\_\_\_ 1 of each year, commencing \_\_\_\_\_ 1, 2015.

The 2015 Series A Bonds will be issued as fully registered bonds, registered in the name of Cede & Co., as nominee of The Depository Trust Company, New York, New York (“DTC”), and will be available to ultimate purchasers (the “Beneficial Owners”) under the book-entry system maintained by DTC. Beneficial Owners will not receive physical certificates representing their interests in the 2015 Series A Bonds. The principal of, premium, if any, and interest on the 2015 Series A Bonds are payable to DTC by the Trustee, and, so long as DTC is acting as securities depository for the 2015 Series A 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.

The 2015 Series A Bonds are subject to optional and mandatory redemption prior to maturity as described in this Official Statement.

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 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 2015 Series A Bonds, and outstanding parity obligations permitted by the Indenture.

The 2015 Series A 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 2015 Series A 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 2015 Series A 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 2015 Series A 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 2015 Series A Bonds. The 2015 Series A 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.

**MATURITY SCHEDULE**  
(See inside cover)

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.

The 2015 Series A Bonds are offered when, as and if issued by the SFPUC and received by the Underwriter, subject to the approval of validity by Orrick, Herrington & Sutcliffe LLP, San Francisco, California, and Curis Bartling P.C., Oakland, California, Co-Bond Counsel, and to certain other conditions. Certain matters will be passed upon for the SFPUC and the City by the City Attorney of the City and County of San Francisco and for the Underwriter by Nossaman LLP. Orrick, Herrington & Sutcliffe LLP, San Francisco, California, is also acting as Disclosure Counsel. Public Financial Management, Inc., San Francisco, California, and Kitahata & Company, San Francisco, California, Co-Financial Advisors to the SFPUC, assisted in the structuring of this financing. It is expected that the 2015 Series A Bonds in fully registered form will be available for delivery in book-entry form in New York, New York, on or about \_\_\_\_\_, 2015.

**Wells Fargo Securities**

March \_\_, 2015

\* Preliminary, subject to change.

**MATURITY SCHEDULE**

**2015 Series A Bonds**

(Base CUSIP\* Number: \_\_\_\_\_)

\$ \_\_\_\_\_ Serial Bonds

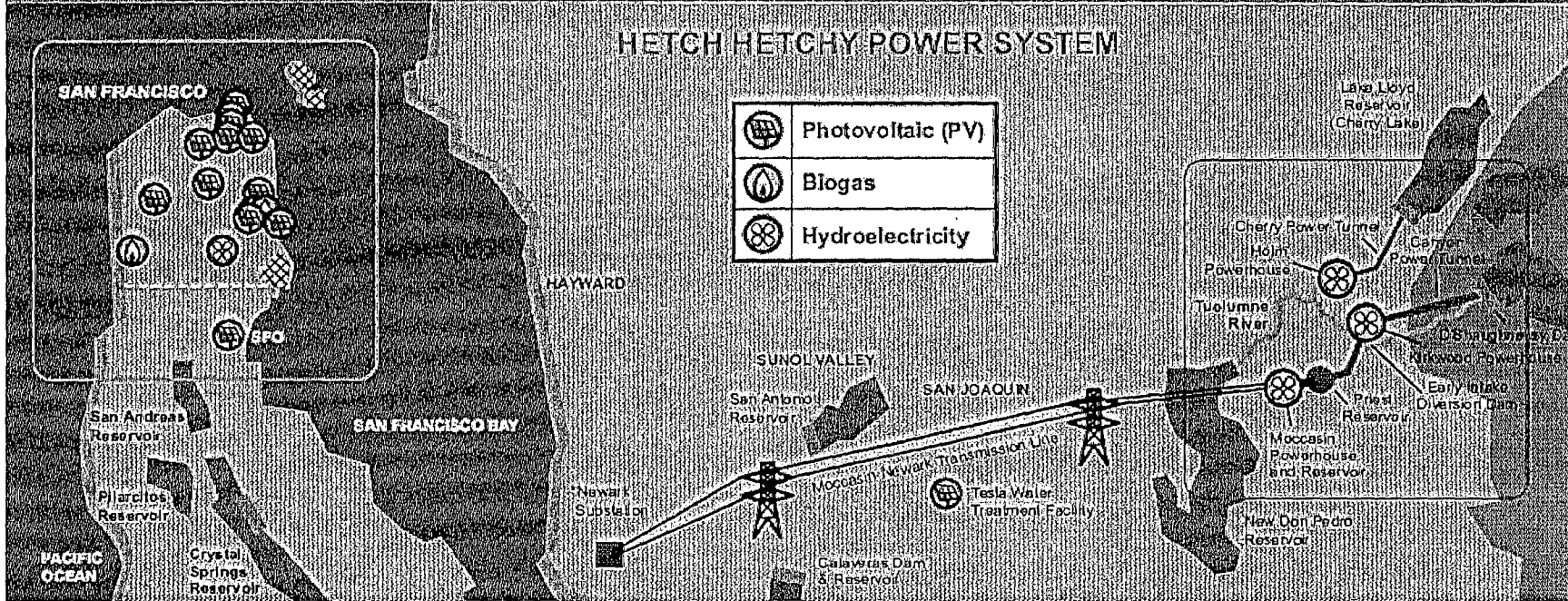
Maturity	Principal Amount	Interest Rate	Yield	CUSIP*
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\$ \_\_\_\_\_ % Term Bonds Due \_\_\_\_\_ 1, \_\_\_\_\_ Price - \_\_\_\_\_ % CUSIP\* \_\_\_\_\_

\$ \_\_\_\_\_ % Term Bonds Due \_\_\_\_\_ 1, \_\_\_\_\_ Price - \_\_\_\_\_ % CUSIP\* \_\_\_\_\_

\* Copyright 2015, American Bankers Association. CUSIP data provided herein by Standard and Poor's, CUSIP Global Services, managed for the American Bankers Association by Standard & Poor's Financial Services LLC. This data is not intended to create or maintain a database of CUSIP descriptions or numbers and is not intended to create and does not serve in any way as a substitute for the CUSIP Service. CUSIP numbers are provided only for the convenience of the reader. Neither the SFPUC nor the Underwriter take any responsibility for the accuracy of such CUSIP numbers.

# Power Enterprise Generating Capacity and Transmission Infrastructure



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Figure 1-1 – SFPUC Power System (Not to Scale)

The 2015 Series A 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. 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 2015 Series A 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 initial purchasers of the 2015 Series A 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 City maintains a website at <http://www.sfgov.org> and the SFPUC maintains a website at <http://www.sfwater.org>. The information contained in such websites is not incorporated by reference and should not be relied upon in making an investment in the 2015 Series A Bonds.

The issuance and sale of the 2015 Series A 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 2015 SERIES A BONDS, THE UNDERWRITER MAY OVERALLOT OR EFFECT TRANSACTIONS WHICH STABILIZE OR MAINTAIN THE MARKET PRICE OF THE 2015 SERIES A 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 2015 Series A Bonds and may not be reproduced or used, in whole or in part, for any other purpose.

The Underwriter has provided the following for inclusion in the Official Statement in connection with the offering of the 2015 Series A Bonds: The Underwriter has reviewed the information in this Official Statement in accordance with, and as part of, their respective responsibilities to investors under the federal securities laws, as applied to the facts and circumstances of this transaction, but the Underwriter does not guarantee the accuracy or completeness of such information.

## FORWARD LOOKING STATEMENTS

CERTAIN STATEMENTS CONTAINED IN THIS OFFICIAL STATEMENT REFLECT NOT HISTORICAL FACTS BUT FORECASTS AND "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.

**SAN FRANCISCO PUBLIC UTILITIES COMMISSION**

Ann Moller Caen, President  
Francesca Vietor, Vice President  
Vince Courtney, Commissioner  
Anson Moran, Commissioner

**PUBLIC UTILITIES COMMISSION OFFICIALS**

Harlan L. Kelly, Jr., General Manager  
Michael Carlin, Deputy General Manager and Chief Operating Officer  
\_\_\_\_\_, [Acting] Assistant General Manager, Business Services and Chief Financial Officer  
Barbara Hale, Assistant General Manager, Power Enterprise  
Tommy T. Moala, Assistant General Manager, Wastewater Enterprise  
Steven R. Ritchie, Assistant General Manager, Water Enterprise  
Juliet Ellis, Assistant General Manager, External Affairs  
Emilio Cruz, Assistant General Manager, Infrastructure Division

**CITY AND COUNTY OF SAN FRANCISCO**

**MAYOR**

Edwin M. Lee

**BOARD OF SUPERVISORS**

\_\_\_\_\_, Board President, District \_\_

John Avalos, District 11  
David Campos, District 9  
Katy Tang, District 4  
Malia Cohen, District 10  
Norman Yee, District 7

Mark Farrell, District 2  
Jane Kim, District 6  
Eric Mar, District 1  
London Breed, District 5  
Scott Wiener, District 8

\_\_\_\_\_, District 3

**CITY ATTORNEY**

Dennis J. Herrera

**CITY TREASURER**

José Cisneros

**OTHER CITY AND COUNTY OFFICIALS**

Benjamin Rosenfield, Controller  
Naomi Kelly, City Administrator

**SPECIAL SERVICES**

**Co-Bond Counsel**

Orrick, Herrington & Sutcliffe LLP  
San Francisco, California

Curls Bartling P.C.  
Oakland, California

**Disclosure Counsel**

Orrick, Herrington & Sutcliffe LLP  
San Francisco, California

**Co-Financial Advisors**

Public Financial Management, Inc.  
San Francisco, California

Kitahata & Company  
San Francisco, California

**Trustee**

U.S. Bank National Association  
San Francisco, California

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## OFFICIAL STATEMENT

\$45,000,000\*

### PUBLIC UTILITIES COMMISSION OF THE CITY AND COUNTY OF SAN FRANCISCO POWER REVENUE BONDS, 2015 SERIES A (GREEN BONDS)

#### 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 2015 Series A 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 the power revenue bonds captioned above (the "2015 Series A Bonds").

#### Authority for Issuance

The SFPUC is issuing the 2015 Series A Bonds pursuant to authority granted by Sections 9.107(6) and 9.107(8) of the Charter (the "Charter") of the City and County of San Francisco (the "City"), Ordinance No. \_\_\_\_\_ passed by the Board of Supervisors of the City (the "Board of Supervisors") on \_\_\_\_\_, 2015 ("Ordinance No. \_\_\_\_\_"), and a First Supplemental Trust Indenture, dated as of March 1, 2015 (the "First Supplemental Indenture"), by and between the SFPUC and U.S. Bank National Association as trustee (the "Trustee"), which supplements a Trust Indenture, dated as of March 1, 2015 (the "Master Indenture"), by and between the SFPUC and the Trustee. The Master Indenture and the First Supplemental Indenture are referred to herein collectively as the "Indenture."

The 2015 Series A Bonds are being issued under a resolution adopted by the SFPUC governing body (the "Commission") on December \_\_, 2014, and Ordinance No. \_\_\_\_\_.

#### 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: the Water Enterprise, the Wastewater Enterprise and the Hetch Hetchy Water and Power Enterprise ("Hetch Hetchy Water and Power"). The Water Enterprise provides drinking water to retail customers in the City, to certain retail customers outside of the City and to wholesale customers in three other Bay Area (defined below) counties. The Wastewater Enterprise provides sanitary waste and stormwater collection, treatment and disposal services to residential, commercial and industrial customers in the City and three municipal sewer service providers serving residents and businesses in northern San Mateo County. Hetch Hetchy Water and Power operates and maintains 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 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"), related transmission facilities down to the City of Newark, California ("Newark"), and the related water storage and transportation facilities from Hetch Hetchy Valley to a connection with the facilities of the Water Enterprise (collectively, the "Hetch Hetchy Project"). The Power Enterprise (defined below) provides hydroelectric, solar and other power, serving City municipal customers, the Modesto Irrigation District ("MID") and the Turlock

\*Preliminary, subject to change

Irrigation District ("TID" and, collectively, the "Districts"), and other public agencies and retail customers, and provides pedestrian and streetlight services. 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 Treasure Island Development Authority ("TIDA"). See **THE PUBLIC UTILITIES COMMISSION, THE HETCHY HETCHY PROJECT** and **THE POWER ENTERPRISE**.

For financial purposes, Hetch Hetchy Water and Power is comprised of two component funds: Hetchy Hetchy Water and Hetchy Hetchy Power (known as and referred to in this Official Statement as the "Power Enterprise"). All power sales revenues are allocated to the Power Enterprise. Operating and capital costs of Hetch Hetchy Water and Power benefitting solely the Power Enterprise, and 55% of combined operating and capital costs that benefit both Hetch Hetchy Water and the Power Enterprise, are allocated to the Power Enterprise. See **THE POWER ENTERPRISE**. Operating and capital costs benefitting solely Hetch Hetchy Water, and 45% of combined operating capital costs benefitting both Hetch Hetchy Water and the Power Enterprise are allocated to the SFPUC's Water Enterprise.

The 2015 Series A Bonds are secured by a pledge of Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits (each defined below). The 2015 Series A Bonds are not secured by or payable from the revenues of the Water Enterprise, the revenues of the Wastewater Enterprise, the revenues allocated to Hetch Hetchy Water or the revenues of the Power Enterprise that do not constitute "Revenues" (as defined in the Indenture).

#### Purposes

The 2015 Series A Bonds are being issued to finance the reconstruction or replacement of existing facilities of the Hetch Hetchy Project and to finance energy conservation projects. See **POWER ENTERPRISE CAPITAL PROGRAM**.

Proceeds of the 2015 Series A Bonds will also be applied to (a) fund capitalized interest with respect to the 2015 Series A Bonds, (b) to fund a debt service reserve account for the 2015 Series A Bonds and (c) pay the costs of issuance of the 2015 Series A 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 the 2015 Series A Bonds, any parity revenue bonds issued under the Indenture (collectively, "Bonds") and any other parity obligations permitted by the Indenture. The 2015 Series A Bonds and all other Bonds 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 2015 Series A 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 2015 Series A Bonds from any source of funds other than Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The SFPUC has no taxing power. 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 2015 Series A Bonds. The General Fund of the City is not liable for the payment of the principal of, premium, if any, or interest on the 2015 Series A 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 2015 Series A Bonds. The 2015 Series A 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.

### **Outstanding and Future Parity Obligations**

The 2015 Series A Bonds are the first Series of Bonds to be issued under the Master Indenture and there are currently no other obligations of the SFPUC payable from Revenues on a parity with the 2015 Series A Bonds. The SFPUC may issue additional Series of Bonds under the 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 2015 Series A Bonds. See **SECURITY FOR THE BONDS – Additional Series of Bonds and – Other Parity Obligations**.

### **Certain Risk Factors**

Investment in the 2015 Series A 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 2015 Series A Bonds, see **CERTAIN RISK FACTORS**.

### **Continuing Disclosure**

The SFPUC will covenant in a Continuing Disclosure Certificate, to be executed and delivered by the SFPUC concurrently with the issuance of the 2015 Series A Bonds, to provide certain financial information and operating data relating to the Power Enterprise and notices of certain enumerated events, and in certain cases only if material. Such information and notices will be filed by the SFPUC with the Municipal Securities Rulemaking Board (“MSRB”) through its Electronic Municipal Market Access system (“EMMA”). For more information concerning the SFPUC’s continuing disclosure commitment and the form of the Continuing Disclosure Certificate, see **CONTINUING DISCLOSURE** and **APPENDIX D – FORM OF CONTINUING DISCLOSURE CERTIFICATE**.

This Official Statement speaks only as of its date, and the information contained herein is subject to change. Except as required by the Continuing Disclosure Certificate, the SFPUC has no obligation to update the information in this Official Statement. See **CONTINUING DISCLOSURE**.

### **Other Matters**

Brief descriptions of the 2015 Series A Bonds, the security and sources of payment for the 2015 Series A 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: Assistant General Manager, Business Services and Chief Financial Officer  
(415) 554-3155

**PLAN OF FINANCE**

The 2015 Series A Bonds are being issued to finance reconstruction or replacement of existing facilities of the Hetch Hetchy Project. The SFPUC expects to spend the proceeds of the 2015 Series A Bonds to finance a rewind of hydro-generating units at Moccasin Powerhouse, reconstruction and replacement of other Hetch Hetchy Project generation facilities and rehabilitation of Hetch Hetchy Project transmission and distribution lines. See **ESTIMATED SOURCES AND USES OF FUNDS** and **POWER ENTERPRISE CAPITAL PROGRAM**.

**ESTIMATED SOURCES AND USES OF FUNDS**

Proceeds of the 2015 Series A Bonds are expected to be applied approximately as set forth below:

<i>Sources</i>	
Bond Principal	\$
Original Issue [Premium] [Discount]	
<i>Total Sources of Funds</i>	\$
 <i>Uses</i>	
Deposit to 2015 Series A Project Fund	\$
Deposit to 2015 Series A Capitalized Interest Account <sup>(1)</sup>	
Deposit to Common Reserve Account	
Costs of Issuance <sup>(2)</sup>	
Underwriter's Discount	
<i>Total Uses of Funds</i>	\$

<sup>(1)</sup> To pay interest of the 2015 Series A Bonds through \_\_\_\_\_ 1, \_\_\_\_\_.

<sup>(2)</sup> Including amounts for rating agency fees, fees for legal services, fees for financial advisors, Trustee's fees and expenses, printing costs, and other costs relating to the issuance of the 2015 Series A Bonds.

**GREEN BONDS DESIGNATION**

The 2015 Series A Bonds are being designated by the SFPUC as "Green Bonds." The purpose of labeling the offered bonds as "Green Bonds" is to allow investors to invest directly in bonds which finance environmentally beneficial projects. The projects to be funded by the 2015 Series A Bonds are all for the hydroelectric facilities (including transmission facilities) of the Hetch Hetchy Project, which produces greenhouse gas ("GHG") free electricity. See **PLAN OF FINANCE** and **POWER ENTERPRISE CAPITAL PROGRAM**. Future issuances of Green Bonds could finance more hydroelectric improvements and other renewable energy projects such as biomass and biowaste, solar and wind, and energy conservation projects such as energy-efficient streetlights. The Indenture does not, however, so restrict the use of proceeds of future issuances of Bonds and in the future the SFPUC may issue Bonds and other parity obligations permitted by the Indenture which are not classified as Green Bonds. See **PLAN OF FINANCE**, **SECURITY FOR THE BONDS**, and **POWER ENTERPRISE CAPITAL PROGRAM**. The 2015 Series A Bonds will not constitute "exempt facility bonds" issued to finance "qualified green building and sustainable design projects" within the meaning of Section 142(1) of the Code.

The repayment obligations of the Power Enterprise with respect to the 2015 Series A Bonds are not conditioned on the completion of any particular project or the satisfaction of any certification relating to the status of the 2015 Series A Bonds as Green Bonds. See **SECURITY FOR THE BONDS**.

**THE 2015 SERIES A BONDS**

**General**

The 2015 Series A Bonds will be dated as of 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 2015 Series A Bonds is payable on \_\_\_\_\_ 1 and \_\_\_\_\_ 1 of each year, beginning \_\_\_\_\_ 1, 2015.



Interest on the 2015 Series A Bonds will be calculated on the basis of a 360-day year composed of twelve 30-day months.

The 2015 Series A Bonds will mature on the dates and in the principal amounts set forth on the inside cover page of this Official Statement. The 2015 Series A 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 System

The 2015 Series A 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 2015 Series A Bonds.

So long as DTC, or its nominee, Cede & Co., is the Owner of the 2015 Series A Bonds, all payments on the 2015 Series A 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 2015 Series A Bonds will be the responsibility of the DTC Participants. See **APPENDIX E—SECURITIES DEPOSITORY AND THE BOOK-ENTRY SYSTEM.**

#### Redemption

**Optional Redemption.** The 2015 Series A Bonds are subject to redemption prior to their stated maturity, at the option of the SFPUC, from any source of available funds, as a whole or in part, on any date on or after \_\_\_\_\_ 1, \_\_\_\_, and if in part by lot within such maturity, at a redemption price equal to 100% of the principal amount of the 2015 Series A Bonds to be redeemed, plus accrued interest thereon to the date fixed for redemption, without premium.

**Mandatory Sinking Fund Redemption.** The 2015 Series A Bonds maturing on \_\_\_\_\_ 1, \_\_\_\_, and \_\_\_\_\_ 1, \_\_\_\_, are further subject to redemption prior to their stated maturity, from the 2015 Series A Bond Retirement Account, on any \_\_\_\_\_ 1, \_\_\_\_ on or after \_\_\_\_\_ 1, \_\_\_\_, and \_\_\_\_\_ 1, \_\_\_\_, respectively, by lot within any such maturity if less than all of the 2015 Series A Bonds of such maturity and tenor be redeemed, upon payment of the principal amount thereof and accrued interest thereon to the date fixed for redemption, without premium.

The 2015 Series A Term Bonds maturing on \_\_\_\_\_ 1, \_\_\_\_, shall be redeemed from Mandatory Sinking Fund Payments in the following principal amounts on the dates indicated below.

Redemption Date (_____ 1)	Principal Amount
------------------------------	---------------------

†

† Maturity

The 2015 Series A Term Bonds maturing on \_\_\_\_\_ 1, \_\_\_\_, shall be redeemed from Mandatory Sinking Fund Payment in the following respective principal amounts on the dates indicated below.

Redemption Date (_____1)	Principal Amount
-----------------------------	---------------------

†

† Maturity

**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 2015 Series A 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 – Defeasance.**

**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 2015 Series A 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.**

The facilities of the Power Enterprise have not been pledged or mortgaged and do not 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 is valid and binding in accordance with the terms thereof from the time of issuance of the 2015 Series A Bonds; such Revenues will be immediately subject to such pledge; and such pledge will constitute a lien and security interest which will immediately attach to such Revenues and will be 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 Holms 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.

**Net Revenues.** The Indenture defines "Net Revenues" as all of the Revenues, less all Operation and Maintenance Expense and Priority R&R Fund Deposits, if any.

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 on or with respect to loans from any Separate System maintained by the SFPUC. 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) revenues of any Separate System, (n) Water Enterprise revenues and (o) 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, (e) losses from any sale or other disposition of Power Enterprise assets, and (f) 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 the amount, if any, required by the Charter to be deposited into the Reconstruction and Replacement Fund from Revenues prior to deposits into the Bond Fund. Because proceeds of the 2015 Series A Bonds will be used to finance the reconstruction and replacement of existing facilities, the SFPUC has determined that no Priority R&R Fund Deposits are presently required.

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. As of November 1, 2014, the SFPUC has not entered into any Swap Agreements payable from Revenues. See **Other Parity Obligations**.

#### **Limited Obligations**

**The SFPUC is not obligated to pay the principal of, premium, if any, or interest on the 2015 Series A Bonds from any source of funds other than Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The SFPUC has no taxing power. 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 2015 Series A Bonds. The General Fund of the City is not liable for the payment of the principal of, premium, if any, or interest on the 2015 Series A 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 2015 Series A Bonds. The 2015 Series A 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.

#### **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 and all other charges or obligations against the Revenues of whatever nature now or hereafter imposed thereon by law or contract.

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;

*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.

#### **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, 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 and if (i) within 120 days after receipt of the Consulting Engineer's report the SFPUC implements the recommendations set forth in such report, or (ii) the report states that the Power Enterprise cannot generate Revenues 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 or reduces its Operation and Maintenance Expenses to the extent otherwise recommended in such report, or (iii) 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; and "Available Funds" means any unencumbered amounts, including unappropriated 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. See **APPENDIX A – SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE.**

#### **Reserve Fund**

The Indenture creates a special fund of the SFPUC to be known as the "Power 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. The Trustee shall establish the Common Reserve Account and may establish 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 or the Supplemental Indenture authorizing the issuance thereof. The Trustee shall deposit in each Reserve Account proceeds of sale of each Series of Bonds or portion thereof 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 an amount equal to the Reserve Requirement for such Series of Bonds or portion thereof.

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.

Each Reserve Account is required to be maintained at all times at the aggregate Reserve Requirements 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. 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.

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. The 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, the amount, if any, as shall be specified in the Supplemental Trust Indenture authorizing the issuance of such Series of Bonds.

The 2015 Series A Bonds will be a Common Reserve Series.

**Reserve Account Credit Facility.** 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.

The Indenture defines "Reserve Account Credit Facility" as 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 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.

#### **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 for reconstruction and replacements of the properties constituting a part of the Power Enterprise due to physical and functional depreciation.

### Other Parity Obligations

The Indenture prohibits the SFPUC from issuing or incurring any obligations or creating additional indebtedness payable from Revenues on a parity with the 2015 Series A 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 principle 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. As of November 1, 2014, 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 a parity with the 2015 Series A 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) Evidence acceptable to the Trustee (which may be a Certificate of the SFPUC so stating) 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:

- (i) The Principal, Purchase Price or Redemption Price of the Bonds or Original Bonds (as defined in the Indenture) 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.

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

- (a) The documents specified in paragraphs (a) and (c) above; and
- (b) Either (A) the document specified in paragraph (d) 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; and
- (c) 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**

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. Ordinance No. \_\_\_\_\_ (“Ordinance \_\_\_”), passed by the Board of Supervisors of the City (the “Board”) on \_\_\_\_\_, 2015, enacted the Public Utilities Commission Power Enterprise Revenue Bond Law. Ordinance \_\_\_ 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].” Ordinance \_\_\_ is expected to become effective on \_\_\_\_\_, 2015.

The Charter generally requires voter approval of revenue bonds issued by the SFPUC. The Charter, however, contains several exceptions to the general requirements:

- 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.
- 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.
- Section 8B.124 of the Charter authorizes the SFPUC to issue revenue bonds, when authorized by ordinance approval by two-thirds vote of the Board, for purposes of reconstructing, replacing, expanding, repairing or improving water facilities or clean water facilities or combinations of water and clean water facilities under the jurisdiction of the SFPUC.
- Section 9.109 of the Charter authorizes the Board 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.

The 2015 Series A Bonds are being issued pursuant to the authority granted by Section 9.107(6) and 9.107(8) of the Charter and Ordinance No. \_\_\_\_\_.

#### **Revenue Bond Oversight Committee**

On November 5, 2002, the voters of the City 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 (each as defined herein).

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 his or her representative.

The work of the RBOC is funded by 1/20th of 1% of the gross bond proceeds of revenue bond issuances or sales to the extent permitted by law.

The current terms of the members of the RBOC expire on January 1, 2016.

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 thirty 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.

### **Outstanding Parity Obligations**

The 2015 Series A Bonds are the first Series of Bonds to be issued under the Master Indenture and 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 2015 Series A Bonds.

### **Subordinate Obligations**

The Power Enterprise has previously issued, and the Indenture permits the Power Enterprise in the future to issue, bonds, notes or other obligations of the Power Enterprise 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 those securing repayment of the Bonds (the "Subordinate Obligations").

In November 2008, the SFPUC issued \$6,325,000 aggregate principal amount of clean renewable energy bonds ("CREBs") to finance the installation of solar energy equipment on various City-owned facilities. The CREBs mature in Fiscal Year 2023 and the average annual debt service relating to the CREBs is \$421,667.

In October 2011, the SFPUC issued \$8,291,000 aggregate principal amount of taxable qualified energy conservation bonds ("QECBs"). The QECBs were issued 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 April 2012, the SFPUC issued \$6,600,000 aggregate principal amount of taxable new clean renewable energy bonds ("NCREBs"). The NCREBs were issued to fund certain qualified facilities that will provide clean, renewable energy at Davies Symphony Hall, City Hall, and University Mount Reservoir. The NCREBs mature in Fiscal Year 2027-28 and the annual debt service relating to the NCREBs, net of anticipated federal subsidy payments to the SFPUC, is \$480,690.

The CREBs, QECBs and the NCREBs will constitute Subordinate Obligations under the Indenture.

Shortly after the issuance of the 2015 Series A Bonds, the SFPUC intends to establish a commercial paper program ("CP Program") for the Power Enterprise. The CP Program will provide the Power Enterprise with an interim funding source for capital spending until long-term financing is obtained. Commercial paper notes issued pursuant to the CP Program will be Subordinate Obligations. The SFPUC has similar commercial paper programs for the Water Enterprise and Wastewater Enterprise.

### **State Loan**

The SFPUC was awarded a \$3 million loan from the California Energy Commission to fund a portion of the LED streetlight conversion project, but has yet to receive any loan proceeds. The loan has an interest rate of 3% and a repayment period of 15 years and will constitute a Subordinate Obligation under the Indenture. Loan amounts will be disbursed after costs are incurred, and the SFPUC anticipates receiving loan proceeds in early 2015.

### **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 met. See **SECURITY FOR THE BONDS – Other Parity Obligations**.

### **Power Purchase Agreements**

In June 2009, the Power Enterprise entered into a 25-year power purchase agreement with SFCity1, LP (“SFCity1”) to purchase electricity generated from a solar photovoltaic project located at Sunset Reservoir. In accordance with the terms and conditions thereof, commencing on the project’s commercial operation date, SFCity1 will sell and deliver, and the Power Enterprise shall purchase and accept, all of the output of the project. The facility achieved commercial operation in November 2010.

Payments made by the Power Enterprise under its agreement with SFCity1 constitute Operation and Maintenance Expenses under the Indenture. See **SECURITY FOR THE BONDS – Pledge of Revenues – Net Revenues**. In Fiscal Years 2012-13 and 2013-14, the Power Enterprise purchased approximately 6,902 megawatt-hours (“MWh”) of electricity for a total payment of \$1,761,000 and approximately 6,716 MWh of electricity for a total payment of \$1,758,000, respectively.

### **Other Obligations Payable from Revenues**

The SFPUC purchased and cleared a parcel at 525 Golden Gate Avenue, one block north of City Hall, and completed the construction of a new, 13-story office building on the site to house the administrative offices of the SFPUC’s three utility enterprises. The SFPUC moved into the building in July 2012. Total project costs were approximately \$202 million and were financed with land sale proceeds, fund balances, grants and the proceeds of certificates of participation (the “2009 Certificates of Participation”), 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. Pursuant to a Memorandum of Understanding between the City and the SFPUC, the SFPUC will reimburse 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 currently 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.

**Debt Service Requirements**

Set forth below are the annual principal, interest and total debt service requirements for the 2015 Series A Bonds:

Fiscal Year Ending June 30	2015 Series A Bonds		Total Debt Service <sup>(1)</sup>
	Principal	Interest	
2015	\$	\$	\$
2016			
2017			
2018			
2019			
2020			
2021			
2022			
2023			
2024			
2025			
2026			
2027			
2028			
2029			
2030			
2031			
2032			
2033			
2034			
2035			
2036			
2037			
2038			
2039			
2040			
2041			
2042			
2043			
2044			
<b>TOTAL<sup>(1)</sup></b>	\$	\$	\$

<sup>(1)</sup> Totals may not add due to rounding.

**THE CITY AND COUNTY OF SAN FRANCISCO**

The City is the economic and cultural center of the Bay Area and northern California. The limits of the City 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"). The City 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 wine country is about an hour's drive to the north. The City's most recently completed and adopted Comprehensive Annual Financial Report (the "CAFR") for its fiscal year 2012-13 estimated the City's fiscal year 2012-13 through 2013-14 population at 839,100.

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 retail, entertainment and the arts, conventions and tourism, service businesses, banking, professional and financial services, corporate headquarters, international and wholesale trade, multimedia and advertising, biotechnology and higher education.

The City is a major convention and tourist destination. According to the San Francisco Travel Association, a nonprofit membership organization, during the calendar year 2013, approximately 16.9 million people visited the City and spent an estimated \$9.38 billion during their stay. The City is also a leading center for financial activity in the State and is the headquarters of the Twelfth Federal Reserve District, the Eleventh District Federal Home Loan Bank, and the San Francisco regional Office of Thrift Supervision.

The City benefits from a highly skilled, educated and professional labor force. The CAFR estimates that per-capita personal income of the City for fiscal year 2012-13 was \$73,197. The San Francisco Unified School District operates 5 transitional kindergarten schools, 72 elementary and K-8 school sites, 13 middle schools, 18 senior high schools (including two continuation schools and an independent study school), and 34 State-funded preschool sites, and sponsors 13 independent charter schools. Higher education institutions located in the City include the University of San Francisco, California State University-San Francisco, University of California-San Francisco (a medical school and health science campus), the 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 Art Institute of California - San Francisco, the San Francisco Conservatory of Music, the California Culinary Academy 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 and owned and operated by the City, is the principal commercial service airport for the Bay Area and one of the nation's principal gateways for Pacific traffic. In fiscal year 2012-13, SFO serviced approximately 44.7 million passengers and handled 370,195 metric tons of cargo. The City is also served by the Bay Area Rapid Transit District ("BART") (electric rail commuter service linking the City 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 the City and residential areas to the north, east and south of the City. San Francisco Municipal Railway ("Muni"), operated by the San Francisco Municipal Transportation Agency (the "SFMTA"), provides bus and streetcar service within the City. 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 the State, promotes a balance of maritime-related commerce, fishing, recreational, industrial and commercial activities and natural resource protection.

The City is governed by a Board of Supervisors elected from eleven districts to serve four-year terms, and a Mayor who serves as chief executive officer, elected citywide to a four-year term. Edwin M. Lee is the 43rd and current Mayor of the City, having been elected by the voters of the City in November 2011. The City's budget for fiscal years 2014-15 and 2015-16 totals \$8.58 billion and \$8.56 billion, respectively. The City's General Fund portion of each year's budget is \$4.27 billion in fiscal year 2014-15 and \$4.33 billion in fiscal year 2015-16, with the balance being allocated to all other funds, including enterprise fund departments, such as the SFMTA, SFO, the Port and the SFPUC. The City's CAFR estimates that the City employed approximately 28,387 full-time-equivalent employees at the end of fiscal year 2012-13. According to the Controller, the preliminary fiscal year 2014-15 total net assessed valuation of taxable property in the City is approximately \$181.8 billion.

THE GENERAL FUND OF THE CITY IS NOT LIABLE FOR THE PAYMENT OF DEBT SERVICE ON THE BONDS AND NEITHER THE CREDIT NOR THE TAXING POWER OF THE CITY IS PLEDGED TO THE PAYMENT THEREOF. 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.

## THE PUBLIC UTILITIES COMMISSION

### General

The SFPUC is a department of the City responsible for the maintenance, operation and development of three utility enterprises: Hetch Hetchy Water and Power, which consists of Hetch Hetchy Water and the Power Enterprise, the Water Enterprise and the Wastewater Enterprise, all as further described below.

*The revenues of the Water Enterprise and the Wastewater Enterprise, and revenues allocable to Hetch Hetchy Water, are not available for payment of the principal of, premium, if any, or interest on the Bonds. See SECURITY FOR THE BONDS – Pledge of Revenues.*

### Organization, Purposes and Powers

**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 as 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, which provides water for distribution through the Water Enterprise and hydroelectric power to municipal and public infrastructure, services and facilities of the City and to commercial customers 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 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 benefit both Hetch Hetchy Water and the Power Enterprise, also are allocated to the Power Enterprise. See **THE POWER ENTERPRISE**. Operating and capital costs benefitting Hetch Hetchy Water and 45% of operating capital costs benefitting both Hetch Hetchy Water and the Power Enterprise are allocated to the SFPUC’s 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, San Francisco General Hospital, 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 City residents and businesses and other customers. Additionally, the Power Enterprise provides power to the Districts and to other customers consistent with prescribed contractual obligations and federal law. See **THE POWER ENTERPRISE**.

**Water Enterprise.** Nearly 2.6 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 the City and is responsible for water deliveries to residents and institutions within the City limits, as well as to a number of retail accounts outside of the City limits. In addition, the SFPUC sells water to 27 wholesale customer entities in San Mateo, Alameda and Santa Clara Counties under the 2009 Water Supply Agreement and related individual contractual agreements.

*The revenues of the Water Enterprise are not “Revenues” under the Indenture and do not secure the payment of the principal of, premium, if any, or interest on the Bonds, including the 2015 Series A 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 wastewater and stormwater flows within the City to three water pollution control plants, also located within the City. Treated effluent flows are then discharged through deep-water outfalls into the San Francisco Bay and Pacific Ocean. The Wastewater Enterprise also operates and maintains a sewer system on Treasure Island/Yerba Buena Island pursuant to an agreement with TIDA, and an onsite wastewater and stormwater reclamation and treatment facility at the new SFPUC headquarters at 525 Golden Gate Avenue.

*The revenues of the Wastewater Enterprise are not "Revenues" under the Indenture and do not secure the payment of the principal of, premium, if any, or interest on the Bonds, including the 2015 Series A 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 municipal customers' energy supplies and utilities of the City as well as the real, personal and financial assets under the SFPUC's jurisdiction. The SFPUC is governed by the Commission.

In June 2008, an initiative measure amended the Charter, changing the process for Commission appointments, and establishing qualifications for commissioners, as follows:

- 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.
- In order to stagger the terms of the commissioners, the members appointed to Seats 2 and 4 served for an initial term of two years from August 1, 2008. The remaining three members appointed to Seats 1, 3, and 5 served for an initial term of four years from August 1, 2008. Thereafter, the terms of all members are four years.
- Members may be suspended by the Mayor and may be removed by a three-fourths vote of the Board of Supervisors for official misconduct.

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

<u>Name and Title</u>	<u>Seat</u>	<u>Originally Appointed</u>	<u>Term Expires</u>
Ann Moller Caen, President	3	March 1997	August 2016
Francesca Vietor, Vice President	1	September 2008	August 2016
Vince Courtney	5	January 2011	August 2016
Anson Moran	4	July 2009	August 2018

Seat 2 is currently vacant.

**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.

**Harlan L. Kelly, Jr.** Harlan L. Kelly, Jr. became General Manager of the SFPUC in September 2012. He previously served as the SFPUC's Assistant General Manager, Infrastructure, and was responsible for implementing over \$10 billion in capital programs for water, sewer and power, including the \$4.6 billion Water System Improvement Program, the \$6.9 billion Sewer System Improvement Program, and the \$202 million SFPUC Headquarters and Administration Building at 525 Golden Gate Avenue. His civil engineering career spanning nearly three decades includes his tenure as the City Engineer of San Francisco. At San Francisco Department of Public Works, he held functional and project management positions, including Acting General Manager, and Deputy Director of Engineering, during which he managed complex capital improvement programs that included the rebuild and seismic retrofit of City Hall, and expansions of convention, hospital, county jail, and public arts facilities. He is a licensed professional engineer, and a graduate of the University of California at Berkeley. He is the recipient of the Municipal Fiscal Advisory Committee's Public Municipal Excellence Award from the San Francisco Planning and Urban Research Association; the Public Works Leader of the Year Award from the American Public Works Association – Northern California Chapter; the Eminent Engineer Award from the National Engineering Honor Society Tau Beta Pi; and the Heroes and Hearts Award from the San Francisco General Hospital Foundation for exceptional community service. He is a member of the Construction Managers Association of America, the American Society of Civil Engineers, the National Society of Black Engineers, and the American Public Works Association. He is co-founder of the youth internship program Project Pull, which has been in continuous operation since 1995, and he has served on the Board of Directors of the Embarcadero YMCA.

**Michael Carlin.** Michael Carlin is the SFPUC Deputy General Manager. Mr. Carlin has worked for the SFPUC since 1996 and served from 2004 through 2009 as Assistant General Manager for Water. Since 2009 he has served as Deputy General Manager. Mr. Carlin acts as Chief Operating Officer of the SFPUC, reporting directly to the General Manager, and oversees the SFPUC's efforts to integrate Asset Management, Supervisory Control & Data Acquisition, Work Order Writing & Tracking, Security and other systems and functions across the Water, Wastewater and Power Enterprises and throughout the organization. Mr. Carlin also plays a leading role in overseeing new initiatives and the many environmentally innovative "green" projects that cut across enterprises within the SFPUC, including a comprehensive SFPUC-wide approach towards confronting and adapting to the impacts of climate change. He joined the SFPUC as the Water Resources Planning Manager in 1996. Prior to joining the City, he was the Chief of Planning for the San Francisco Bay Regional Water Quality Control Board. Mr. Carlin holds a B.A. in Biology from San Francisco State University and an M.P.A. with an emphasis in Environmental Management from Golden Gate University.

**Barbara Hale.** Barbara Hale is Assistant General Manager of the Power Enterprise. Ms. Hale oversees the Power Enterprise, including Power Retail Services, Utilities Services, Regulatory Affairs, Infrastructure Development and Power Purchasing and Scheduling. She is responsible for the development of a strategic business plan for the organization, setting out priorities, objectives, schedules and policy issues. Ms. Hale oversees all power-related inter-governmental relations, works directly with the Commission on policy and capital matters, and provides direction and leadership to a multi-discipline staff at remote and downtown locations. Ms. Hale provides strategic advice on energy policy matters to the General Manager and manages a staff responsible for developing specific energy efficiency projects and renewable and other advanced sources of electrical generation. Ms. Hale also acts as liaison between the SFPUC and State and federal agencies responsible for energy policy, such as the California Public Utilities Commission, the California Energy Commission, the California Power Authority, the Federal Energy Regulatory Commission, and the United States Department of Energy. 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. Ms. Hale has pursued extensive graduate coursework in Applied Economics.

**Tommy T. Moala.** Tommy T. Moala is the Assistant General Manager of the Wastewater Enterprise which protects public health and safety through the collective treatment of raw sewage runoff. The City's unique and award-winning combined sewer system treats on average more than 79 million gallons per day of sewage and stormwater during dry weather periods. Mr. Moala oversees operations, equipment and facilities maintenance, structural design and governmental compliance for the City's three wastewater treatment plants, 993-mile long sewer system and network of wastewater pumping stations. A former Naval Propulsion Engineer, Mr. Moala has

more than 15 years experience in wastewater in-plant management. He began his 20-year career with the SFPUC as a Stationary Engineer, moving up steadily through the ranks to Senior Engineer, Chief Stationary Engineer and Operations Manager, and setting the Wastewater Enterprise's standard for zero-violations along the way. A team recipient of the National Protection Agency O & M Award and the National Association of Clean Water Agency Award, Mr. Moala has also received then-Mayor Gavin Newsom's Public Managerial Excellence Award and the SFPUC O'Shaughnessy Award for organizing the SFPUC Emergency Response Team dispatched to Hurricane Katrina. He is a member of the Water Environment Federation, the California Water Environment Federation, the National Association of Clean Water Agencies and the American Water Works Association.

**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.

**Emilio Cruz.** Emilio Cruz is the Assistant General Manager of Infrastructure, responsible for overseeing all water, power and sewer capital programs and projects, including the Water System Improvement Program, Sewer System Improvement Program, and Hetchy System Improvement Program. He leads the Infrastructure Division, coordinating the work of the following Bureaus: Environmental Management, Construction Management, Engineering Management, Project Management, Project Controls, and Contract Administration. Mr. Cruz brings to the SFPUC all the attributes of a dynamic career encompassing twenty-five years serving the City, and private and non-profit sectors. He was Program Manager of the Waterfront Capital Improvement Program under the Chief Administrative Officer of San Francisco; Director of Facilities and Operations for the Port of San Francisco; Chief of Staff to the Mayor; General Manager of the Municipal Railway; Vice President of URS Corporation; Director of Economic Development for the City and County of San Francisco; Chief Operating Officer of the Hispanic Scholarship Fund; Vice President and Partner of EPC Consultants; and most recently, Program Manager for the \$4.2 billion Transbay Terminal Program. He is a graduate of Stanford University, with a B.S. in Civil Engineering. He has led numerous boards, including the San Francisco Board of Education, and San Francisco Planning and Urban Research (SPUR), for which he served as President and Vice President, respectively.

**Juliet Ellis.** Juliet Ellis is the Assistant General Manager for External Affairs at the SFPUC. Prior to holding her position as an Assistant General Manager, Ms. Ellis served on the Commission as a Commissioner for two years. During her time as a Commissioner, she championed the adoption of an Environmental Justice and Community Benefits policy. Ms. Ellis now oversees the implementation of these policies as Assistant General Manager, along with the Policy and Government Affairs, Communications, and Sustainability Planning teams within the SFPUC. Ms. Ellis also oversees the agency's national partnerships with other public utilities with the goal of scaling community benefits programs within the public sector. Before joining the SFPUC, Ms. Ellis spent nine years as the Executive Director of Urban Habitat, a regional social and environmental justice organization. She also served as the Associate Program Officer for Neighborhood and Community Development at The San Francisco Foundation. Ms. Ellis has served on numerous national, regional and local boards and committees.

### **Employee Relations**

The wages, hours and working conditions of City employees are determined by collective bargaining pursuant to State law (the Meyers-Milias-Brown Act, California Government Code Sections 3500-3511) and the Charter. Except for nurses and a few hundred unrepresented employees, the Charter requires that bargaining impasses be resolved through final and binding interest arbitration conducted by a panel of three arbitrators. The award of the arbitration panel is final and binding unless legally challenged. Wages, hours and working conditions of nurses are not subject to interest arbitration, but are subject to Charter-mandated economic limits. Strikes by City employees are prohibited by the Charter. Since 1976, no City employees have participated in a union-authorized strike. See **CERTAIN RISK FACTORS – Unavailability of Generation or Transmission – Labor Actions.**

The City's budget for fiscal years 2014-15 and 2015-16 includes 27,669 and 29,053 budgeted City positions, respectively. City workers are represented by 37 different labor unions. The largest unions in the City are the Service Employees International Union, Local 1021; the International Federation of Professional and Technical Engineers, Local 21; and the unions representing police, fire, deputy sheriffs and transit workers. In May 2014, the City negotiated three-year agreements (for fiscal years 2014-15 through 2016-17) with most of its labor unions. In general, the parties agreed to: (1) annual wage increases schedule of 3% (October 11, 2014), 3.25% (October 10, 2015), and between 2.25% and 3.25% depending on inflation (July 1, 2016); and (2) some structural reforms of the City's healthcare benefit and cost-sharing structures to rebalance required premiums between the two main health plans offered by the City. These changes to health contributions build on reforms agreed to by most unions during earlier negotiations.

The SFPUC employs approximately 2,300 of the City's workers. 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 37 labor unions representing City workers more broadly, 14 presently represent SFPUC employees. Most SFPUC employees collectively bargain every three years, with certain unions having agreed to a two-year memorandum of understanding with the City ending June 30, 2014.

Over the next five years, nearly half of the SFPUC workforce will be eligible for retirement. A new generation of jobs will require workers with specialized training, skills and experience. The SFPUC's Strategic Sustainability Plan includes indicators for employee training and development. The SFPUC also provides ethics training, diversity training, management training, environmental management system training, as well as fraud prevention and awareness training.

#### **Local Hiring**

The SFPUC has 64 projects underway that are covered by San Francisco's Local Hire Ordinance. For projects with a 20 percent and 25 percent local hire requirement, the SFPUC has achieved 37 percent and 39 percent local resident participation, respectively. San Francisco apprentices also made up 80 percent and 68 percent of total apprentice hours, respectively.

### **THE HETCH HETCHY PROJECT**

#### **General**

The Hetch Hetchy Project impounds and delivers to the Water Enterprise water for approximately 2.6 million Bay Area residents and, in an average year, generates more than 1,600,000 MWh of clean, renewable electricity which the Power Enterprise uses to serve its customers, including the City and the Districts. The Hetch Hetchy Project is comprised of approximately 384.3 megawatts ("MW") of nameplate capacity hydroelectric generating facilities in the Sierra Nevada foothills of Tuolumne County, California (including O'Shaughnessy Dam), reservoirs (including Hetch Hetchy Reservoir), hydroelectric generation and electric transmission facilities, and water transmission facilities from Hetch Hetchy Valley to a connection with the facilities of the Water Enterprise.

#### **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 the City 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 U.S. 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 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.**

The Raker Act grants the City the right to sell electricity generated by the Hetch Hetchy Project to meet municipal and pumping needs, including without limitation its own needs and the needs of the Districts, and for commercial purposes, provided that 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 retail customers and then on the wholesale market to public entities—primarily other publicly-owned utilities (“POUs”)—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 1  
HETCH HETCHY PROJECT GENERATION RESOURCES  
POWERHOUSE TIMELINE**

<b>Date</b>	<b>Event</b>	<b>Capacity Increases / (Decreases) in MW</b>
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 (1 <sup>st</sup> and 2 <sup>nd</sup> 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
<b>Total Installed Capacity</b>		<b>384.3</b>

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 2

generating units, totaling approximately 165 MW in nameplate capacity, and relies on gravity-driven water flowing downhill from Cherry Lake. Kirkwood Powerhouse has 3 generating units, with an aggregate nameplate capacity of approximately 115 MW. Moccasin Powerhouse has 2 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 combined generating capacity of these facilities is approximately 384.3 MW, about 97% of the Power Enterprise's aggregate 395 MW of controlled generation capacity. Annual Hetch Hetchy Project generation averages about 1.6 million MWh, which represents on average approximately 148% of the Power Enterprise's firm retail load. These multiple, sizable hydroelectric generating units, and ready access to State 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 115kV and 50 miles of 230kV transmission line, plus four substations. The SFPUC transmission segments are described in the following table.

**TABLE 2  
SFPUC TRANSMISSION LINE SEGMENTS**

<b>Lines No.</b>	<b>Voltage</b>	<b>Transmission Line Alignment / Segment</b>	<b>Year Put into Operation</b>	<b>Length (miles)</b>
1 & 2	230 kV	Holm Powerhouse to SFPUC's Intake Switchyard	1961	1.55
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 Switchyard	1961	28.3
7 & 8	115 kV	SFPUC's Warnerville Switchyard to Modesto Irrigation District's Standiford Substation	1961	12.5
9 & 10	230 kV	Kirkwood Powerhouse to SFPUC's Intake Switchyard	1964	0.73
11	230 kV	Kirkwood Powerhouse to SFPUC's Intake Switchyard	1987	0.73

The transmission facilities also interconnect with PG&E's transmission and distribution systems in order to deliver SFPUC generated or purchased power to customers of the Power Enterprise in and around the City. The Hetch Hetchy Project has a small amount of load connected directly to its system, averaging less than 2.5 MW, with a 7 MW peak during water pumping operations to support the Water Enterprise's municipal water operations.

Approximately 75% of HHWP's generating capacity is connected to its 230kV system via Intake Switchyard and Warnerville Substation. Intake Switchyard is a 230kV 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: 230kV yard, 115kV yard, and PG&E 230kV tap yard. The 230kV yard has a main and transfer bus configuration and consists of two incoming lines, Lines 5 and 6, three 230/115kV transformers, and two tap lines for PG&E. The 115kV system has a main bus, three transformer positions and two line positions, Lines 7 and 8 towards Modesto's Standiford Substation.

The remaining 25% of HHWP's capacity is normally connected to another 115kV sub system at the Moccasin Switchyard which interconnects with PG&E's Newark Substation via two 115kV lines, Lines 3 and 4. Taps off of these lines connect to Turlock Irrigation District at their Oakdale Substation. The Moccasin Powerhouse can be connected to either the 115kV or 230kV systems.

The SFPUC owns about 50 miles of electric 22.4kV and 2.4kV distribution line to provide electricity to its remote operations. The distribution is fed from the powerhouses, where electricity is generated at 13.8kV then stepped up to 22.4kV. At some remote sites, the electricity is stepped down to 2.4kV for distribution.

### **Physical Condition of Facilities**

The Hetch Hetchy Project powerhouses have been in operation since the 1960's. See – **Hydroelectric Generation**. While civil assets, such as structures, dams, tunnels and pipes, have a service life of up to 100 years, the mechanical and electrical equipment within the powerhouses have a shorter service life of approximately 25-50 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 a variety of factors including, but not limited to, site conditions, runtime, loading, and maintenance. The SFPUC has experienced life expectancies beyond industry standards. However, as the electrical equipment ages and technology expires, obtaining replacement parts becomes a challenge.

SFPUC construction costs are higher than industry average. Total project cost estimates to rehabilitate the large Hetch Hetchy Project powerhouses is as follows:

- Holm Powerhouse: \$17 million
- Kirkwood Powerhouse: \$35 million
- Moccasin Powerhouse: \$35 million

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

The Hetch Hetchy Project electric delivery system includes the transmission lines and the switchyards/substations. These assets vary in age, condition, and estimated service life remaining. A majority of the Hetch Hetchy Project's transmission lines were built in the 1960's, and have a remaining life expectancy of about 15 years. Transmission lines 3 & 4 were built in 1925, and have exceeded their expected life expectancy. 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. The SFPUC has an ongoing inspection/replacement program funded at about \$2 million per year. The inspection/replacement program includes, but is not limited to, tower repair (to address bent members and/or corrosion), insulators, hardware, grounding and a vegetation management program to maintain proper clearances. Though work is being done to extend the life of the assets and guard against catastrophic failure, there are many portions of the system that are of concern, including but not limited to the tower foundations and the grounding. Although Lines 3&4 are at end of life, the existing lines are acceptable for limited

continued use with selective refurbishment; a complete rebuild will ultimately be required for long-term continued use of this transmission segment.

In addition to aging transmission line infrastructure, in 2014 the SFPUC identified hard clearance issues at SFPUC's condition assessment of its transmission lines identified 195 safety detections on the SFPUC transmission lines that do not meet National Electric Safety Code and/or California Public Utilities Commission General Order 95 minimum safety clearance criteria. In response to these findings, the SFPUC increased maintenance and selective refurbishment activities in order to preserve and extend the operability of these lines and to meet regulatory requirements. In order to maintain the current level of reliability of these lines, substantial future maintenance and upkeep will be required, about \$48 million. Transmission Lines 3 & 4 are important to the delivery of electricity by the Power Enterprise, and the Power Enterprise anticipates that there would be moderate cost and operational impacts were they to go out of service.

Hetch Hetchy Project substations/switchyards were built in the 1960's. For planning purposes, the SFPUC assumes expected life of equipment based on industry standards and manufacturer's design life. Similar to the powerhouses, the SFPUC has experienced life expectancies beyond industry standards but is experiencing challenges obtaining replacement parts. In 2014, Intake Switchyard was rebuilt. The SFPUC plans to rebuild Warnerville Substation followed by Moccasin Switchyard. Decision on the final construction project will hinge on the SFPUC's future business. Total project cost estimates to rehabilitate the Moccasin Switchyard and Warnerville Substation in-kind is as follows:

- Moccasin Switchyard: \$25 million
- Warnerville Substation: \$45 million

Intake Switchyard, Moccasin Switchyard and Warnerville Substation are imperative 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 impacting the SFPUC's ability to transmit Hetch Hetchy Project generation to the grid.

The fourth substation, Calaveras Substation, feeds the SFPUC facilities at Sunol Valley Water Treatment Plant. Though the financial impact to Revenues from loss of this substation is small, the operational impact to the water operations is significant. Improvements at this facility were made to facilitate construction activities for the SFPUC's Water System Improvement Program. However, a condition assessment of the facility has not been performed.

The SFPUC has not performed a condition assessment of its distribution system. However, of the 50 miles of system, about 20 miles was replaced after it was destroyed in the 2013 Rim Fire. The SFPUC has an ongoing inspection/maintenance. The inspection program includes inspection of poles, ancillary equipment and a vegetation management program to maintain proper clearances.

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 and assessments, testing, calibrating and adjusting the unit, and verifying and updating station drawings on all systems associated with each unit.

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.

## **Hetch Hetchy Project Operations**

### *General*

The Hetch Hetchy Project provides two utility services with distinct ratepayers: water and power. A number of the 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. Pursuant to 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 at 90% certainty 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 through Power Enterprise operations without risking water supply. Similarly, the Regional Water System Bay Area reservoirs 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 are capable of receiving 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 in the summer and fall, when electricity prices tend to be higher. Therefore, in an average year, the Power Enterprise has excess generation to sell in the first half of the year and generally supplements Power Enterprise 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 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 “Don Pedro Project”). The 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 Don Pedro Project.**

#### **CPUC Regulation**

The California Public Utilities Commission (the “CPUC”) establishes standards that apply to transmission and distribution facilities in order to ensure the safety of employees and the general public. The CPUC applies these



standards to 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 the State. The statutes place the supervision of the safety of non-federal dams and reservoirs under the jurisdiction of the California Department of Water Resources, Division of the Safety of Dams ("DSOD"). Dams under jurisdiction are artificial barriers, together with appurtenant work, including outlet towers, which are twenty-five feet or more in height or have an impounding capacity of fifty acre-feet or more.

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 additional investigations and detailed safety evaluations when necessary.

At a minimum, a DSOD representative inspects each Hetch Hetchy Project dam annually with the SFPUC Hetchy Dam Safety Engineer. DSOD has historically requested up to two inspections per year to inspect the dam at its highest and lowest water levels in order to observe the upstream face of the dam under both conditions. In addition to the DSOD inspection, each Hetch Hetchy Project dam is inspected weekly by the SFPUC Watershed Keepers. Data from these weekly inspections, deflection data and weir flow data are reviewed by the SFPUC Hetchy Dam Safety Engineer. In addition to the scheduled inspections, inspections are performed following earthquakes if certain parameters are met based on size and epicenter proximity to the dam.

### **FERC Proceeding Regarding Relicensing of the Don Pedro Project**

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

The current FERC license for the Don Pedro Project expires in 2016, subject to the issuance of annual licenses if necessary to complete the relicensing process. The Districts initiated the process to relicense the Project using FERC's Integrated Licensing Process in 2010. Relicensing is a lengthy process, stretching over a number of 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 are in the process of working through a Study Plan related to the relicensing that was issued and subsequently supplemented by FERC. The Districts have reports that, as of July 1, 2014, the Study Plan described a total of 35 studies to be completed and a total of 24 had been completed by the end of 2013. TID has further reported that two more studies were to be performed in 2014, but the California Department of Fish and Wildlife did not issue permits timely and TID filed an extension letter with FERC to perform the studies in 2015. After all of the studies are complete, California Environmental Quality Act ("CEQA") and National Environmental Policy Act efforts must be undertaken before the license may be finalized. The Districts may operate under the existing license until the new license is finalized subject to the issuance of annual licenses by FERC.

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 La Grange Dam. Four of the ten priority projects have been completed. However, no additional projects are in the planning or construction phases due to the limited availability of federal and state grant funds.

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 whereby the Districts agreed to provide all flows ordered by FERC to

implement the Settlement Agreement for the term of the current license for the Don Pedro Project (2016), in exchange for which the City pays to the Districts on a monthly basis an amount aggregating \$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 Settlement Agreement runs until expiration of the current FERC license. License conditions, such as 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.

#### **WECC/NERC Requirements**

The FERC has adopted mandatory electric reliability standards developed by the North American Electric Reliability Corporation ("NERC") and enforced in the West by the Western Electric Coordinating Council ("WECC"). These standards require all entities that are a part of the bulk power supply 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 a number of 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. See **DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION – Federal Law and Regulation – Federal Energy Regulatory Commission.**

#### **Wildfire Considerations; 2013 Rim Fire**

The Hetch Hetchy Project and electric transmission and other facilities operated by the Hetch Hetchy Project staff are primarily located in the Sierra Nevada and surrounding foothills, where wildfire remains a risk, particularly in the Yosemite National Forest surrounding Hetch Hetchy Reservoir. Wildfires can disrupt the operation of or cause damage to electric generation and transmission facilities.

The third largest wildfire in the State's history, and the biggest wildfire on record in the Sierra Nevada, started on August 17, 2013 and burned over 257,135 acres. This fire, popularly referred to as the Rim Fire, passed through an area containing two of the Hetch Hetchy Project's electric generating stations and reached the southern edge of the Hetch Hetchy Reservoir, which supplies 85% of San Francisco's drinking water and the Kirkwood and Moccasin Powerhouses, which combined generate approximately 57% of the electricity produced by the Hetch Hetchy Project. Other critical infrastructure, inclusive of electricity transmission and distribution lines, switch yards, and structures were in the wildfire's direct path prior to containment. On August 23, 2013, the City declared a State of Emergency followed by Governor Brown's declaration of a State of Emergency for the San Francisco area. Emergency response teams were immediately deployed to protect the City's resources and assets in the Sierra Nevada. The fire was fully contained in October 2013.

The Rim Fire inflicted approximately \$40 million in damages to the Hetch Hetchy Project and related transmission assets 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. In order 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 the majority of 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.**

Ultimately, though, endpoint delivery of electricity to Power Enterprise retail and wholesale customers remained unaffected. Nor did the Rim Fire have an adverse impact on drinking water quality, despite some ash having been observed falling into the Hetch Hetchy Reservoir.

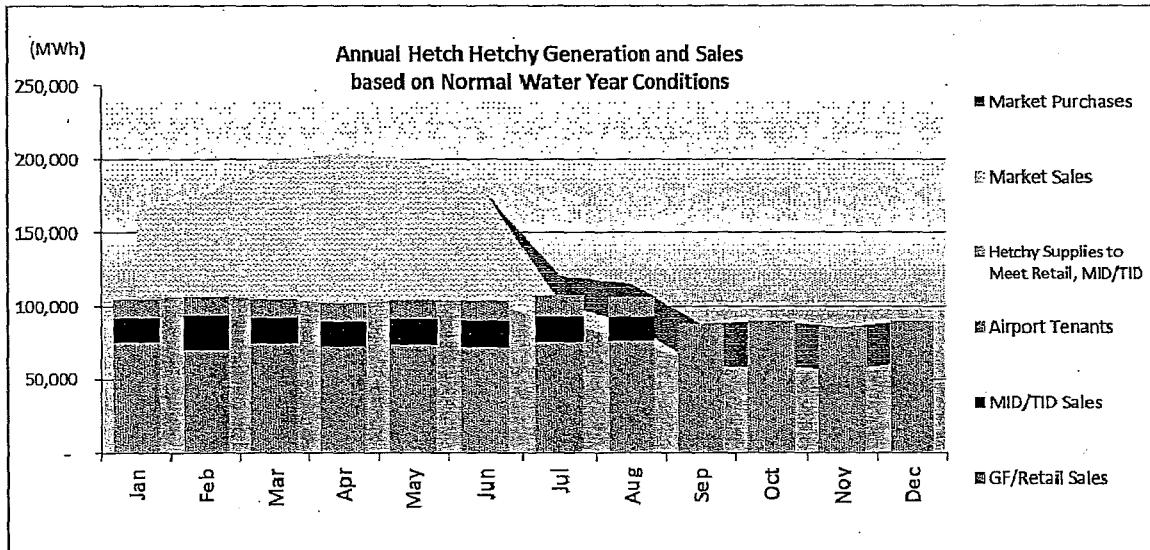
**Safety and Security**

The safety of the facilities of the Hetch Hetchy Project is maintained via a combination of regular inspections by SFPUC employees, electronic monitoring, and analysis of unusual incident reports. All above-ground facilities operated and maintained by the SFPUC are controlled-access facilities with fencing, gates, closed circuit television systems and security officers at certain points. 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. Security improvements are evaluated on an ongoing basis. The electronic operations and controls have been evaluated and exposure reduced through a series of technology systems enhancements and integration.

**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 serving the City and the Water Enterprise's wholesale customers (the "Regional Water System") to satisfy customer draws and fill reservoirs at lower elevations, while electrical demand within the western region generally is 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 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 electricity demand. See - **Hetch Hetchy Project Operations -- Water First Policy and CERTAIN RISK FACTORS - Changes in Energy Prices.**

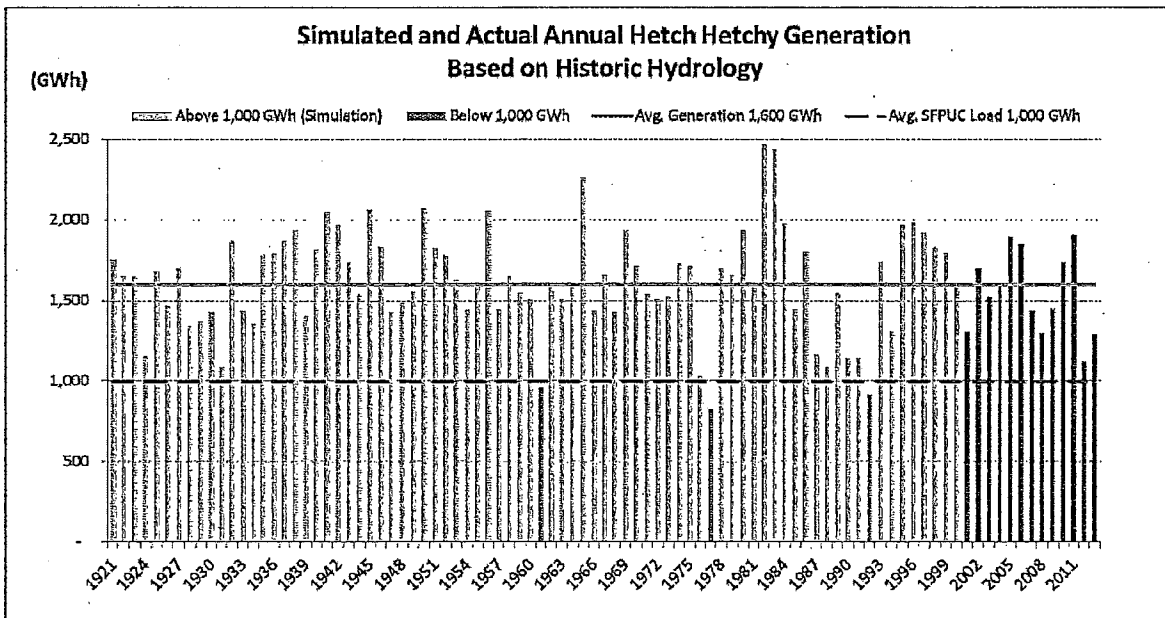
Under normal annual rainfall conditions, the Hetch Hetchy Project generates in excess of 1,600,000 MWh per year, with an average of 1,160,000 MWh generated in the first six months to satisfy average customer load of 532,700 MWh during the same period, and an average of 440,000 MWh generated in the second six months to satisfy average customer load of 547,300 MWh during the same period. The Power Enterprise manages Hetch Hetchy Project generation with market power purchases as needed to meet retail load in real time. During the second half of an average year, Power Enterprise typically makes wholesale electricity purchases equating to approximately 15% of its customers' total load. See **THE POWER ENTERPRISE-- Load and Electricity Supply Resource Management; Wholesale Electricity Trading.**



Source: SFPUC.

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, four extended droughts have been recorded in the Hetch Hetchy Project area, including the current drought which began in 2011. See – **Current California Drought**. 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 2013 and 2014 can also impact the overall cost of purchased power. The SFPUC cannot predict when current drought conditions will 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 and a minimum of approximately 900,000 MW, while serving an average retail customer load of 1,000,000 MWh. On average, the Hetch Hetchy Project generates approximately 1,600,000 MWh of electricity. 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 annual generation of the Hetch Hetchy Project applying current system generation capability to historic hydrology since 1921.



Source: SFPUC.

### Potential Impact of Climate Change

The issue of climate change has become an important factor in hydroelectric generation in the State. 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 the State, and numerous studies on climate and water in the State have been conducted to determine the potential impacts. Based on these studies, global warming could result in the following types of water resources impacts in the State, including impacts on the Regional Water System and associated watersheds which may, in turn, impact hydroelectric generation:

- Reductions in the average annual snowpack 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 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 affect water quality,
- Sea level rise and an increase in saltwater intrusion,
- Increased water temperatures with accompanying adverse effects on some fisheries,
- Increases in evaporation and concomitant increased irrigation need, and
- Changes in urban and agricultural water demand.

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

The SFPUC staff performed an initial evaluation of the effect on the Regional Water System of a 1.5-degree Celsius (°C) temperature rise between 2000 and 2025. The temperature rise of 1.5°C is based on a consensus among many climatologists that this level of warming is likely to occur by 2025. The evaluation predicts that an increase in temperature of 1.5°C will raise the snowline approximately 500 feet. The elevation of the watershed draining into Hetch Hetchy Reservoir ranges from 3,800 to 12,000 feet above mean sea level, with about 87% of the watershed area above 6,000 feet. In 2000 (a normal hydrologic year in the 82-year period of historical record), the average snowline in this watershed was approximately 6,000 feet during the winter months. Therefore, the SFPUC evaluation indicates that a rise in temperature of 1.5°C between 2000 and 2025 will result in less or no snowpack between 6,000 and 6,500 feet and faster melting of the snowpack above 6,500 feet. Similarly, a temperature rise of 1.5°C between 2025 and 2050 will result in less or no snowpack between 6,500 and 7,000 feet and faster melting of the snowpack above 7,000 feet.

The SFPUC climate change modeling indicates that, on average, about 7% of the runoff currently draining into Hetch Hetchy Reservoir will shift from the spring and summer seasons to the fall and winter seasons in the Hetch Hetchy basin by 2025. This percentage is within the current inter-annual variation in runoff and is within the range accounted for during normal runoff forecasting and existing reservoir management practices. The additional change between 2025 and 2030 is not expected to be detectible. The predicted shift in runoff timing is similar to the results found by other researchers modeling water resource impacts in the Sierra Nevada due to warming trends associated with climate change.

Based on these preliminary studies and the results of literature reviews, the potential impacts of global warming on the Regional Water System are not expected to affect power system operations through 2030. SFPUC hydrologists are involved in ongoing monitoring and research regarding climate change trends and will continue to monitor the changes and predictions, particularly as these changes relate to water system operations and management of the Regional Water System. The SFPUC has developed a work plan to further advance its research on the effects of climate change on the Regional Water System.

### **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 entitled the "Water Sustainability and Environmental Restoration Planning Act of 2012" 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 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.

There have been previous studies that examined prior proposals to remove the Hetch Hetchy Reservoir. For example, the California Department of Water Resources and the California Department of Parks and Recreation issued a comprehensive report and concluded that it does appear technically feasible to restore Hetch Hetchy Valley, but expressed caution about the financial feasibility. The study estimated that the total cost for such a project would range from nearly \$3 billion to \$10 billion. The planning effort alone, they concluded, would take up to ten years to complete and would cost \$65 million dollars. Restoring the Hetch Hetchy Valley would likely increase, perhaps substantially, the Power Enterprise's annual cost of purchased power. *However, the SFPUC is unable to predict whether this initiative, or any future initiatives, might be submitted to or approved by the voters, or their potential impact on the SFPUC or the Power Enterprise.*

## THE POWER ENTERPRISE

### General

The SFPUC has provided electricity services to retail customers and State 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 distribution facilities. Since at least 1945, the City has purchased transmission and distribution services from PG&E through a FERC-approved wholesale agreement to transmit and deliver electricity to 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 operates as a combined water storage and conveyance and electric generation and transmission utility. See **THE HETCH HETCHY PROJECT**.

The Power Enterprise generates, schedules, purchases, sells, transmits and distributes electricity to meet the needs of about 2,416 retail and wholesale customers, including 17% of the total electricity consumed within the City (the remaining 83% is provided by PG&E and electricity service providers through a State-authorized direct access scheme). The Power Enterprise's customers include:

- all 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 all City streetlights and traffic signals;
- tenants in City-owned properties, including tenants of the Port and SFO; and
- Phase I of the Hunters Point Shipyard redevelopment project, and tenants of TIDA on the former Naval Station Treasure Island and Yerba Buena Island.

The Power Enterprise also owns, operates and maintains more than half of the street lights in the City (and supplies electricity to the other half, which are owned and maintained by PG&E). In addition, as a result of the increasing commitment of the citizens of the City to reduce the production of GHGs, together with related environmental concerns, the SFPUC has begun to diversify its generation resources and make additional investments in renewable generation resources and energy efficiency. The Power Enterprise provides energy efficiency and other clean energy services to its customers, including solar incentives to all residents and business within the City through the Power Enterprise's GoSolarSF program to encourage local installations of small scale photovoltaic systems.

The Power Facilities include the power-related assets of the Hetch Hetchy Project, 17 solar arrays and 2 biogas facilities, transmission lines, and numerous distribution facilities. The Power Enterprise currently has 98 full-time positions, an operating budget of \$146.7 million for fiscal year 2014-15, and a capital budget of about \$75.9 million for power facilities and the power portion of combined water and power facilities. The Power

Enterprise's revenues for fiscal year 2013-14 were approximately \$105.8 million. 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**.

### **Power Service in San Francisco**

Based on the City's 2011 Updated Electricity Resource Plan (defined below), average total electricity usage in the City has been approximately 6,000 GWh per year or an average of approximately 980 MW of demand. The City's electricity needs are met by three primary providers. PG&E is the largest provider of electricity in the City and serves approximately 75% of the total load within the City. Approximately 8% of the City's electricity needs are supplied by third party electric service providers through direct bilateral power contracts, using PG&E's transmission and distribution system to deliver their electricity. The remaining 17% of the City's electricity usage is served by the Power Enterprise. The above percentages include electricity usage for all of the City and SFO, which is located outside City boundaries in unincorporated San Mateo County, California and served by the SFPUC. In 2008, the City established a goal to have 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.

#### *Pacific Gas & Electric Company*

Incorporated in the State in 1905, PG&E is an investor-owned natural gas and electric utility company, with a service area in the State that extends from Eureka in the 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 municipally owned utilities. PG&E is headquartered in the City. PG&E is the largest provider of electricity within San Francisco. As calculated in San Francisco's 2011 Updated Electricity Resource Plan, PG&E provided 75% of the approximately 6,000 MWh of electricity consumed in the City as of 2010.

PG&E is regulated primarily by the CPUC and FERC. CPUC has jurisdiction over the rates and terms and conditions of service for PG&E's 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 and interstate natural gas transportation contracts. The federal Nuclear Regulatory Commission oversees the licensing, construction, operation, and decommissioning of the PG&E's nuclear generation facilities. 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:

- *Customer.* The SFPUC is a wholesale customer of PG&E's for transmission and distribution services within the City, paying PG&E approximately \$16 million a year for such services. The SFPUC is also a customer of PG&E streetlight services, currently paying PG&E approximately \$1.6 million a year to operate and maintain the 20,000 PG&E-owned streetlights in the City. The SFPUC, though, provides electricity for all streetlights in the City.
- *Regulator.* A Franchise Agreement between the SFPUC and PG&E, approved by the Board of Supervisors on December 26, 1939, grants PG&E non-exclusive franchises to provide electric and gas service in the City and authorizes 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.* Neither the Raker Act nor PG&E's Franchise Agreement imposes any limitations for the City's ability to serve retail customers. The SFPUC and PG&E are able to compete to serve any load and offer competing products.

### *Electric Service Providers (Direct Access)*

Direct access service in the State was established as a result of the restructuring of the State's electric industry in 1998 through AB 1890 and allows qualified large customers to purchase their electricity directly from qualified generators or other suppliers through bilateral contracts, subject to utility-specific load caps. The local utilities continue to be responsible for transmission and distribution under CPUC tariffs. In the City, although fewer than 800 customers continue to participate in the direct access program, given their large size, their combined electricity usage constitutes approximately 8% of total electricity usage and includes about 60% of PG&E's largest customers within the City, including certain downtown office buildings, large department stores, industrial customers, the University of California and the California State University System. Residential and small commercial customers of investor-owned utilities are not eligible for participation in the direct access program. None of the Power Enterprise's customers are eligible to participate in the State's direct access program.

### *Power Enterprise Service*

The Power Enterprise is responsible for the marketing, sale, transmission, and delivery of all of the clean energy products produced by the Hetch Hetchy Project and other power produced by SFPUC. The Power Enterprise balances that supply with purchases or sales to meet customer demand. The Power Enterprise transmits, distributes, meters, and prepares the electric bills for its customers, comprised of all City offices, facilities, and their tenants, ranging from neighborhood Police Stations and Fire Houses, the Ferry Building, and City Hall, to the Airport, General Hospital, wastewater pumping and treatment facilities, the Regional Water Treatment Facilities, and the Municipal Railway. The Power Enterprise is also the full-service electricity provider to the newly developing Hunters Point Shipyard Phase 1 project and the Transbay Transit Center. The Power Enterprise also provides gas and electric service to former Naval Station Treasure Island, by agreement with TIDA. Power operates and maintains four substations and switchgear, and many miles of distribution wires to provide reliable electric service to its customers. See **Power Enterprise 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. The Power Enterprise has developed and owns 2 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 25,000 street lights and related circuitry throughout the City.

The Power Enterprise's operations and planning are guided by a number of 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 electrical supplies,
  - Encouraging conservation and sustainable technologies.

### **Power Supply Resources**

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



The Power Enterprise portfolio is comprised of approximately 395 MW of renewable electricity generating capacity serving approximately 150 MW of Retail load.

**TABLE 3  
POWER GENERATION RESOURCES**

**Hetch Hetchy Project Large Hydro (96% of Total)**

<u>Powerhouse</u>	<u>Capacity (MW)</u>	<u>Units</u>
Holm	165.0	2
Kirkwood	115.5	3
Moccasin	<u>100.0</u>	<u>2</u>
Total	380.5	7

**Other Renewable (4% of Total)**

<u>Source</u>	<u>Capacity (MW)</u>
Solar (local)	7.7
Hetchy Small Hydro	3.8
Biogas (local)	<u>3.1</u>
Total	14.6

***Solar, Biogas, Wind***

In addition to the generation resources of the Hetch Hetchy Project, the Power Enterprise has developed, owns, and maintains 2.7 MW of rooftop solar projects on City property. The Power Enterprise has also partnered with a private solar developer to build a large-scale, local solar facility on the SFPUC's Sunset Reservoir. The SFPUC has entered into a long-term Power Purchase Agreement for the output of this 5 MW Sunset Solar Generating Project. See – **Power Purchases**. Solar generation capacity is distributed among the 17 municipal solar installations listed below.

**TABLE 4  
SOLAR GENERATION RESOURCES**

Project	Date Online	Location	Output
Moscone Convention Center	Mar. 2004	747 Howard St.	676 kW
Southeast Wastewater Treatment Plant	Oct. 2005	750 Phelps St.	255 kW
Pier 96	Jan. 2007	Pier 96	245 kW
Maxine Hall Neighborhood Medical Center	Dec. 2007	1301 Pierce St.	32 kW
North Point Wet-Weather Facility	Dec. 2007	111 Bay St.	241 kW
City Distribution Division	Dec. 2007	1990 Newcomb Ave.	134 kW
Chinatown Public Library	Jan. 2008	1135 Powell St.	10 kW
San Francisco International Airport	Mar. 2008	Terminal 3	456 kW
Sunset Reservoir <sup>(1)</sup>	Nov. 2010	Ortega & 28 <sup>th</sup> Ave.	5 MW
MUNI Maintenance Yard	Oct. 2011	1095 Indiana St.	106 kW
Chinatown Public Health Center	Nov. 2011	1490 Mason St.	24.5 kW
Tesla Water Treatment Facility	Mar. 2012	Tracy, CA	32 kW
SFPUC Headquarters	Jun. 2012	525 Golden Gate Ave.	164 kW
Alvarado Elementary School	Nov. 2012	625 Douglass St.	50 kW
MUNI Ways and Structures	Sep. 2013	700 Pennsylvania Ave.	101 kW
Louise M. Davies Symphony Hall	Mar. 2014	201 Van Ness Ave.	182 kW
North Beach Library	Jul. 2014	850 Columbus Ave.	11.7 kW

<sup>(1)</sup> Owned by SFCity1. Power purchased by the Power Enterprise pursuant to a long-term power purchase agreement. See – **Power Purchases**.

Source: SFPUC.

The SFPUC has also begun the process of installing an 80 kW solar electric system on City Hall, which is expected to be operational in 2015.

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.

***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 a number of long-term power purchase agreements to help meet its electricity requirement:

- ***Western Area Power Administration*** – 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 (“TI/YBI”). Through the agreement, WAPA provides full load service and scheduling coordinator services for TI/YBI. The contract allocates a percentage of WAPA’s base resources and supplemental electricity to the SFPUC to meet the existing needs of TI/YBI. Additionally, the WAPA agreement provides for transmission access on the Central Valley Project Transmission System for such allocation. The contract expires on December 31, 2024.
- ***Sunset Reservoir Photovoltaic*** – The SFPUC has entered into an agreement with SFCity1 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 through a 25-year power purchase agreement. The power purchase agreement provides that the SFPUC will purchase all electricity produced by the Sunset Solar Project at specified contract

prices. The contract provides an option for the SFPUC to buy the solar facility at a predetermined price on or after 7 or 15 full years from the actual commercial operation date.

When electricity from its owned-generation resources and long-term purchased power are not sufficient to meet electricity demand, the Power Enterprise supplements its electrical 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, and are required to include electricity produced from GHG-free sources.

### **Wholesale Electricity Sales**

The Raker Act requires the City to sell electricity from the Hetch Hetchy Project first to meet the City's own pumping and municipal needs, then, as available, to meet the pumping and municipal needs of the Districts, and lastly, as available, the City may sell excess electricity 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. Historically, excess Hetch Hetchy Project electricity has generally been sold to other public utilities.

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 eliminate MID's rights to excess electricity from the Hetch Hetchy Project. The SFPUC's agreement with MID expires on June 30, 2015. 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 expires on June 30, 2015. The SFPUC is negotiating updated agreements, subject to the requirements of the Raker Act. 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**.

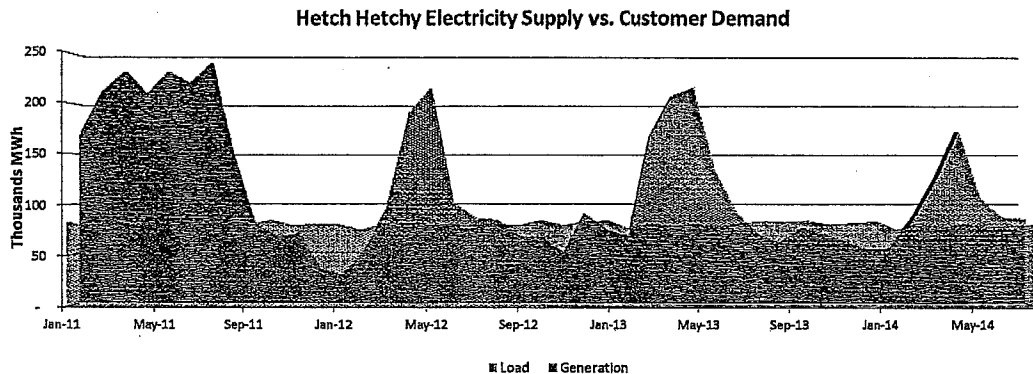
For Fiscal Years 2012-13 and 2013-14 electricity sales to the Districts totaled approximately 227,544 MWh or approximately \$6.54 million, and approximately 103,489 MWh or approximately \$3.43 million, respectively.

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 Riverbank LRA is currently in the process of converting the RAAP to civilian and commercial uses. The agreement expired in 1991, however, the SFPUC continues to provide firm service under the same terms and conditions. Total electric sales to the Riverbank LRA in 2013 were approximately 6,000 MWh. The SFPUC expects to negotiate a new power supply agreement with Riverbank LRA. 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, and a power banking agreement with PG&E. In the second half of the calendar year, the Power Enterprise purchases wholesale electricity to meet, on average, approximately 15% of its needs. During dry years, when less Hetch Hetchy Project generation is available, 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.

In addition to providing transmission and distribution services, PG&E also provides the Power Enterprise with a power banking arrangement. Historically, the SFPUC relied on its electricity bank arrangement with PG&E to hedge and manage differences in Hetch Hetchy Project generation and customer demand on a seasonal basis. The power banking arrangement permits the Power Enterprise to deposit a limited amount of Hetch Hetchy Project electricity during periods when generation exceeds the Power Enterprise's retail and wholesale obligations. The Power Enterprise withdraws, within certain limits, electricity to meet SFPUC requirements when Hetch Hetchy Project generation is less than retail obligations. See **THE HETCH HETCHY PROJECT -- Variability of Hydroelectric Generation**.

The City's interconnection agreement with PG&E allows the Power Enterprise to bank excess electricity to a maximum of 110,000 MWh. As of June 30, 2014, the balance of electricity accounted for under such banking arrangement was 78,502 MWh for the benefit of the Power Enterprise. The interconnection agreement is scheduled to expire in July 2015. Following expiration of the agreement, PG&E will no longer be obligated to provide power banking services to the Power Enterprise. The Power Enterprise anticipates that, after termination of the Interconnection Agreement, it will utilize bilateral agreements or the CAISO market to derive value from its excess generation and meet the SFPUCs requirements during periods when Hetch Hetchy Project Generation is less than retail obligations. See – **Transmission and Distribution**.

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.

### **Transmission and Distribution**

Since at least 1945, the City has purchased transmission and distribution services from PG&E through a FERC-approved wholesale agreement to transmit and deliver electricity to City customers. Currently, the SFPUC takes transmission and distribution services from PG&E through a long-term FERC-approved interconnection agreement. The City's interconnection agreement with PG&E was entered into in 1987 and renegotiated in 2007. Under the interconnection agreement, PG&E provides firm transmission capacity and interconnection to its distribution network. Such wholesale transmission and distribution services are provided to the Power Enterprise at negotiated, FERC-approved rates to facilitate the transmission and distribution of the Power Enterprise's electricity supplies to its customers within the City, on the San Francisco Peninsula, in the East Bay and in other locations. The Power Enterprise also purchases distribution service from PG&E under PG&E's Wholesale Distribution Tariff

to serve customers at Hunters Point and the new Transbay Transit Center. In addition to these arrangements for transmission and distribution services, the Power Enterprise provides electric service on Treasure Island through long-term agreements with the WAPA and the Port of Oakland. See – **Power Supply Resources – Power Purchases.**

The interconnection agreement is scheduled to expire in July 2015. As a result of electric industry restructuring in the 1990s, PG&E is now required to provide open, non-discriminatory service on its distribution and transmission network to wholesale customers, such as the Power Enterprise, under FERC-approved wholesale tariffs. Open access to PG&E's grid avoids the need for the Power Enterprise to install, own and maintain duplicative and costly transmission and distribution infrastructure for its existing customer base. Upon expiration of the current interconnection agreement, the Power Enterprise expects to transition from its current arrangement to similar transmission and distribution services under FERC-approved tariffs. For transmission services, the Power Enterprise will take wholesale transmission services on PG&E's system using the CAISO's Open-Access Transmission Tariff at rates approved and regulated by FERC. For distribution services, the Power Enterprise expects to take distribution services from PG&E under the FERC-approved Wholesale Distribution Tariff at rates approved and regulated by FERC.

The City has filed a complaint against PG&E at FERC related to PG&E's delays in processing the SFPUC's request for service under PG&E's Wholesale Distribution Tariff beginning in July 2015. PG&E acknowledges that the SFPUC is entitled to open access service under the tariff, but disagreements remain regarding the extent of new distribution facilities the City will be required to construct in order to serve its existing customers. Resolution of the complaint, either through a negotiated settlement with PG&E or a decision by the FERC, will impact the cost of service for the Power Enterprise. If the disputed issues are not resolved before the interconnection agreement expires, though, service to Power Enterprise customers will not be interrupted.

See **DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION – Federal Legislation – Federal Law and Regulation.**

Current transmission and distribution rates specified in the interconnection agreement are less than the FERC-approved tariffed rates for transmission service through the CAISO Open-Access Transmission Tariff and distribution service through PG&E's Wholesale Distribution Tariff. With the expiration of the interconnection agreement, the Power Enterprise's transmission and distribution costs are expected to increase. The Power Enterprise's adopted two-year budget through Fiscal Year 2015-16, and all financial projections, include the anticipated cost increases, with the cost budgeted at \$17 million for Fiscal Year 2015-16 and projected to increase 6% per year for the next ten years.

#### ***SFPUC-owned Transmission Service***

The SFPUC owns and maintains four 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 are also connected to two other balancing authorities that serve the SFPUC's two largest wholesale customers. These are the Balancing Authority of Northern California, which covers MID, and 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 is evaluating the potential to extend the transmission line terminating at Newark into the City.

The SFPUC also provides transmission-level service to RAAP via a tap from the SFPUC's 115 kV transmission system located just north of the main RAAP site. See – **Wholesale Electricity Sales.**

#### ***Trans Bay Cable***

The Trans Bay Cable project is an electricity transmission infrastructure project for delivery of electricity to the transmission grid in the City. On August 7, 2007, the Board of Supervisors granted two non-exclusive licenses to Trans Bay Cable LLC ("TBC") for the Trans Bay Cable Project. TBC proposed to install, operate, and maintain approximately 53 miles of high-voltage direct current transmission cable bundle of approximately 10 inches in diameter running from the City of Pittsburg to the City. Approximately 9.4 miles of the cable are in submerged

lands, a small portion of shoreline, and on a portion of a street that are under San Francisco Port Commission jurisdiction. The project came on line November 29, 2010.

The first license is a nonexclusive license to install a 400 MW high-voltage transmission line, with a four-year term. In connection with this license, TBC paid the SFPUC \$3.5 million as a "Renewable Energy, Transmission and Grid Reliability Payment," which the SFPUC is using to study development of two City-owned transmission projects, a Newark-San Francisco Project and a Potrero-Embarcadero Project.

The second license is a non-exclusive license for operation of the high-voltage transmission line with 25-year term with an option to renew for 10 years. TBC is obligated to pay the Power Enterprise approximately \$20 million in 10 separate installments of \$2 million annually, adjusted for inflation, as the "San Francisco Electric Reliability Payment" to implement, advance, promote, or enhance policies and projects consistent with City energy policies, including renewable energy, conservation, and environmental health programs and green jobs training and placement programs which benefit low- income, at-risk, and environmentally disadvantaged communities.

### *In-City Distribution*

PG&E owns and operates most of the electric distribution infrastructure within the City and, with the exception of 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 SFO, large City-owned properties (for example, properties operated by the Port, SFMTA, and the SFPUC's water treatment and wastewater facilities). The Power Enterprise is in the process of installing additional distribution facilities to serve new retail customers in Hunters Point Shipyard (Phase 1) and at the Transbay Transit Center. The SFPUC distribution facilities (lines and substations) directly interconnect to PG&E's distribution network, but they are not adequate to provide service to all SFPUC customers.

Some large Power Enterprise customers, such as SFO, are interconnected at transmission level. Through an agreement with TIDA, the Power Enterprise maintains the distribution system at the former Naval Station Treasure Island, on behalf of TIDA. The existing system on the property is owned by the Navy, but will be transferred to TIDA upon implementation of a memorandum of agreement between TIDA and the Navy. SFPUC has the right to take title to a newly constructed submarine electric cable linking the property to the East Bay. TIDA has entered into a development agreement for the redevelopment of the property, which would include construction of new utility infrastructure.

### **Operational Control**

The Power Enterprise plans for and operates within resource adequacy, renewable portfolio standards ("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 firm 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 Legislation**. 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.

### **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. With the exception of a few large customers, most of 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 result in neither cost savings nor service improvements for such customers. Specifically, PG&E's ability to serve customers in the City is constrained by its non-exclusive franchise agreement with the City and the

Power Enterprise's competitive cost-of-service, which remains below PG&E's cost-of-service as of November 1, 2014.

The following table shows the total number of electric service accounts maintained by the Power Enterprise from Fiscal Year 2009-10 to Fiscal Year 2013-14 by customer category.

**TABLE 5**  
**POWER ENTERPRISE ELECTRIC SERVICE ACCOUNTS**  
**BY CUSTOMER CATEGORY**  
**FISCAL YEARS 2009-10 TO 2013-14**

	<u>2010</u>	<u>2011</u>	<u>2012</u>	<u>2013</u>	<u>2014</u>
City Agencies	1,429	1,437	1,437	1,449	1,470
Non-City Agencies (e.g. SFUSD, SF Community College District)	786	791	780	766	758
Moccasin/City of Riverbank	39	40	41	40	41
Modesto/Turlock Irrigation Districts	2	2	2	2	2
Total accounts	<u>2,256</u>	<u>2,270</u>	<u>2,260</u>	<u>2,257</u>	<u>2,271</u>

Source: SFPUC.

The following table presents the Power Enterprise's major customers by average total amount of electricity purchased during Fiscal Years 2009-10 to 2013-14.

**TABLE 6**  
**ANNUAL ELECTRICITY SALES TO MAJOR CUSTOMERS**  
**FISCAL YEARS 2009-10 TO 2013-14**

	Annual Electricity Sales (MWh)				
	2010	2011	2012	2013	2014
<b>Municipal Customers</b>					
San Francisco International Airport (incl. tenants)	323,050	326,652	330,497	329,327	330,143
Municipal Transportation Agency	113,157	107,509	107,396	106,007	108,232
SFPUC - Wastewater Enterprise	64,994	70,711	66,056	64,112	67,102
Administrative Services Agency	45,123	43,397	41,162	57,684	61,174
Department of Public Health	52,315	55,748	54,901	58,460	61,130
SFPUC - Water Enterprise	43,734	46,913	53,527	54,074	54,444
San Francisco Unified School District	35,776	35,658	34,536	34,079	33,513
Recreation and Parks Department	18,385	18,776	18,865	19,366	20,107
San Francisco Housing Authority	21,789	23,956	23,170	21,803	20,056
City Owned Parking Garages	12,590	12,094	12,015	12,398	12,274
Port of San Francisco <sup>(1)</sup>	8,619	8,380	7,736	8,778	9,423
Other Municipal <sup>(2)</sup>	210,365	208,394	216,425	202,299	202,290
<b>Other Retail</b>					
Treasure Island <sup>(3)</sup>	9,519	9,733	10,535	10,998	10,920
Hunters Point Shipyard Redevelopment Phase 1 Development <sup>(4)</sup>	-	6	28	6	58
Transbay Transit Center <sup>(5)</sup>	-	-	-	-	-
<b>Wholesale</b>					
Turlock Irrigation District	209,163	345,477	199,900	168,921	75,077
Modesto Irrigation District	77,745	113,843	77,938	58,623	28,412
Riverbank (formerly Norris Industries)	8,123	6,166	6,073	6,273	7,707
Western Systems Power Pool	298,549	568,157	143,675	131,200	2,400
<b>Total<sup>(6)</sup></b>	<b>1,552,996</b>	<b>2,001,570</b>	<b>1,404,435</b>	<b>1,344,408</b>	<b>1,104,462</b>

<sup>(1)</sup> Excludes tenants.

<sup>(2)</sup> Includes Port tenants, Moccasin and miscellaneous accounts.

<sup>(3)</sup> Does not include amount for flat rate customers. Customers are tenants of TIDA and Federal agencies, which SFPUC serves by agreement with TIDA.

<sup>(4)</sup> Includes Construction only.

<sup>(5)</sup> Not yet in service.

<sup>(6)</sup> Totals may not add due to rounding.

Source: SFPUC.



### *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

With 40 airlines and 112 direct destinations, SFO is the 7th leading passenger airport in North America and the 19th largest air cargo airport. In its fiscal year 2013-14, SFO served nearly 45 million incoming and outgoing passengers, and moved 329,571 metric tons of cargo.

- San Francisco Municipal Transportation Agency

The SFMTA, a department of the City, is responsible for the management of all ground transportation in the City. The SFMTA operates Muni, which provides bus and street car service and is the nation's seventh largest public transit system. The agency's additional responsibilities include managing parking and traffic, bicycling, walking and the regulation of taxis. The agency is governed by a Board of Directors, appointed by the Mayor and confirmed by the Board of Supervisors.

- San Francisco Unified School District

The San Francisco Unified School District ("SFUSD") is the seventh largest school district in the State, educating over 57,000 students every year. SFUSD is governed by an elected seven-member Board of Education. During school year 2013-14, SFUSD had:

- 72 elementary and K-8 schools
- 12 middle schools
- 19 senior high schools (including two continuation schools and an independent study school)
- 13 preschools
- 13 active charter schools authorized by the District

- Other City Departments

In addition to the departments described above, the Power Enterprise serves all 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.

### *Wholesale Customers*

- The Districts

The TID and MID were both established in 1887, and are publicly owned irrigation districts in the State that also provide electric retail electricity directly to homes, farms and businesses. Both Districts were organized under the Wright Act, operate under the provisions of the California Water Code as special districts, and are governed by five-member Boards of Directors.

TID serves electricity to a growing retail customer base that now numbers in excess of 98,000 residential, farm, business, industrial and municipal accounts. The District also provides irrigation water to more than 5,800 growers in 149,500 acres of Central Valley farmland.

MID provides electricity to over 115,000 residential, commercial, industrial and municipal accounts, and irrigation water to more than 3,000 accounts in a service area of 101,700 acres.

The Power Enterprise has long-term Energy Sales Agreements with both TID and MID. See – **Wholesale Electricity Sales.**

- Riverbank LRA

The Riverbank LRA is currently in the process of converting the RAAP to civilian and commercial uses. The RAAP is located at the southeastern edge of the City of Riverbank, 5 miles north of Modesto and consists of approximately 673,000 square feet of buildings located on 173 acres. RAAP is located at the southeastern edge of the City of Riverbank, 5 miles north of Modesto and consists of approximately 673,000 square feet of buildings located on 173 acres. The SFPUC provided electric service to RAAP when it was a military facility and has continued to provide electric service to the Riverbank LRA as it transitions the site to civilian use. See – **Wholesale Electricity Sales.**

- Western Systems Power Pool

The Western Systems Power Pool (“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 May 9, 2013 and updated June 6, 2013, 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 Department of Water Resources.

The Power Enterprise may purchase or sell energy with different market entities through the Western System Power Pool. 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. The SFPUC’s Energy Trading Risk Committee performs verification processes regularly to update the qualified counterparties in order to comply with Raker Act. During Fiscal Year 2013-14, the Power Enterprise purchased \$2.6 million of power. Sales of excess electricity, after meeting the Power Enterprise’s other obligations, were approximately 2,400 MWh, or approximately \$120,000.

#### *Commercial Customers*

- **Port and SFO Tenants.** The Power Enterprise serves commercial customers at SFO and the Port that are not City General Fund departments. The Power Enterprise has also historically served City General Fund department tenants at SFO. The Power Enterprise acquired the Port tenants as part of the 1997 Master Settlement Agreement with PG&E.
- **Hunters Point Shipyard Phase 1.** A redevelopment project currently under construction, the Hunters Point Shipyard Phase 1 is entitled for 1400 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.
- **Former Treasure Island Naval Station.** Under Navy control since 1941, the former Naval Station 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 Coast Guard, the 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.

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 8000 residential units, and commercial development. The SFPUC operates and maintains the existing water, wastewater, 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.

- **Transbay 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 Transbay Transit Center). 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 Transbay Transit Center, beginning January 2014 with no defined expiration date.

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 SFPUC 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 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 development and is working with developers and other City agencies as later phases are developed.

### **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, Purchasing Selling Entity and Transmission Planner, and as such is subject to mandatory and enforceable NERC Reliability Standards. The SFPUC ensures the secure and reliable operation of its electric system, and compliance with NERC Reliability Standards, by having systems, processes, and trained staff in place to avoid, and if necessary, mitigate operating emergencies. These systems include a Supervisory and Control and Data Acquisition system providing 24/7 monitoring and control functions to SFPUC 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 NERC Reliability Standards, is achieved through this application of tools, processes and trained staff.

### **Municipalization Proposals**

Since 1921, the City’s citizens have voted on a number of voter initiatives that have from time-to-time proposed provision of electricity by the SFPUC to all customers within the City, or municipalization of PG&E’s distribution system within the City. In every case the voters failed to approve a full-scale municipalization of electric service by the City and/or the SFPUC. If such a measure were approved, the City could either take over through eminent domain the existing distribution system within the City, or build out its own distribution system. The decision to build or purchase the distribution system would be a cost-benefit analysis that would include the value and condition of the existing system and the time necessary to build out a new system.

## 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 current customers based on a combination of known new construction projects, expansion of existing service and general projected load growth. These forecasts are factored into the Power Enterprise's adopted budget and ten-year financial plans. In connection with its two year adopted budget for Fiscal Years 2014-15 and 2015-16 and its current ten-year financial plan, the Power Enterprise anticipates electricity sales to current and new customers will increase over the next five years.

The expiration of the Power Enterprise's interconnection agreement with PG&E in 2015 may increase the availability of Hetch Hetchy Project generation to serve retail customer load. The expiration of the interconnection agreement with PG&E will eliminate the SFPUC's power banking arrangement with PG&E. See **THE POWER ENTERPRISE – Load and Electricity Supply Resource Management; Wholesale Electricity Trading.**

**TABLE 7**  
**POWER ENTERPRISE PROJECTED LOAD GROWTH AND POWER SUPPLIES**  
**(MWH)**

	Fiscal Years Ending June 30				
	2015	2016	2017	2018	2019
<b>Future Load of Current Customers<sup>(1)</sup></b>					
Municipal Customers	992,042	978,605	1,002,119	1,010,568	1,019,153
Norris (City of Riverbank)	6,590	6,607	6,733	6,767	6,801
MID Class 1	70,299	88,331	83,299	83,590	83,644
TID Class 1	49,624	62,353	87,051	86,718	86,723
TID Excess	154,715	0	0	0	0
Electricity Sale <sup>(2)</sup>	308,617	372,843	401,116	382,216	369,499
DDA Deposit			0	0	0
<b>Future Load of Current Customers Total</b>	<b>1,581,887</b>	<b>1,508,740</b>	<b>1,580,317</b>	<b>1,569,859</b>	<b>1,565,820</b>
<b>Future Expansion (Redevelopment) Total<sup>(3)</sup></b>	<b>18,155</b>	<b>18,868</b>	<b>20,372</b>	<b>26,774</b>	<b>32,733</b>
<b>Total Future Power Sales</b>	<b>1,600,042</b>	<b>1,527,608</b>	<b>1,600,689</b>	<b>1,596,633</b>	<b>1,598,553</b>
<b>Projected Power Supply</b>					
Hetch Hetchy Generation	1,414,321	1,364,866	1,490,513	1,490,513	1,490,513
Sunset Solar	7,211	7,211	6,719	6,719	6,719
DDA Return	110,000	0	0	0	0
WSPP Energy Purchases	79,452	176,777	115,470	121,709	129,724
<b>Total Projected Power Supply</b>	<b>1,610,984</b>	<b>1,548,854</b>	<b>1,612,702</b>	<b>1,618,940</b>	<b>1,626,956</b>
<b>Delta: Supply - Loads</b>	<b>10,942</b>	<b>21,247</b>	<b>12,012</b>	<b>22,307</b>	<b>28,402</b>
	1%	1%	1%	1%	2%

<sup>(1)</sup> Fiscal Year 2015-16 projections based on adopted budget for Fiscal Years 2014-15 and 2015-16. Fiscal Year 2017-18 and 2018-19 projections based on ten year financial plan.

<sup>(2)</sup> Electricity Sales are all excess Hetch Hetchy Project generation after meeting retail load requirements. The availability of Hetch Hetchy Project generation depends on hydrological conditions. Electricity Sales forecasts are based on Average Annual Hydrological Conditions. See **THE HETCH HETCHY PROJECT – Variability of Hydroelectric Generation**.

<sup>(3)</sup> Future Expansion load includes Treasure Island service.

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, sales of Hetch Hetchy Project generation as available, including amounts expected to become available to serve retail load after 2015, and supplemental market purchases, each as reflected in the Power Enterprise's current five-year forecast.

## POWER ENTERPRISE CAPITAL PROGRAM

### Capital Planning Process

SFPUC's long-term financial planning is performed on an annual rolling ten-year forward basis. The SFPUC prepares a Ten-Year Capital Plan as part of the budget deliberations process as required by the Charter. Proposed long-term capital program, projects and investment, and related costs are included in the Ten-Year Financial Plan. Required rates necessary to pay for both capital and operating costs are also calculated. The Ten-Year Capital Plan is not a budget and is not "appropriated" like a budget. Annual Capital Improvement Programs ("CIPs") can be revised during the development of the budget and final projects, costs and totals for annual CIPs can change. Consequently, even though the annual CIPs are based on the Ten-Year Capital Plan, they may occasionally differ from it.

Consistent with the Charter, updates to the Ten-Year Capital Plan are annually reviewed by the Commission. The Ten-Year Capital Plan provides estimated rate impacts of projected spending and assure compliance with debt service coverage and fund balance reserve policy requirements.

### Ten-Year Capital Plan

In May 2014, the Commission adopted the Ten-Year Capital Plan for the Hetch Hetchy Water and Power Enterprise for Fiscal Years 2014-15 through 2023-24. The Hetch Hetchy Water and Power capital program is divided into power-infrastructure-related projects (allocable to the Power Enterprise), water-infrastructure-related projects (allocable to the Water Enterprise) and joint projects for facilities that are used for both water and power operations (allocable 55% to the Power Enterprise and 45% to the Water Enterprise). The Capital Plan during this period totals \$1.24 billion, with the Power Enterprise's share totaling \$748.3 million. The Capital Plan for Fiscal Year 2014-15 and Fiscal Year 2015-16 was approved by the City as part of the two-year budget for the Power Enterprise, with capital spending budgeted at \$75.8 million and \$73.6 million, respectively, for Fiscal Year 2014-15 and Fiscal Year 2015-16.

The Ten-Year Capital Plan is projected to be funded primarily from a combination of revenues (i.e. cash) and bonds and commercial paper. Specifically, the Ten-Year Capital Plan projects that revenue funding will account for \$162.2 million of project funding, and bond funding will account for \$555.4 million of project funding. For Fiscal Year 2014-15, projects are to be primarily funded from \$40.5 million of revenues and \$33.8 million of bond proceeds; for Fiscal Year 2015-16, projects are expected to be primarily funded from \$17.3 million of revenues and \$54.5 million of proceeds of future bond or commercial paper sales. Revenues attributed to Cap and Trade Auctions expected to be received from the State account for another capital funding source for the Power Enterprise.

The Power Enterprise's capital plan consists primarily of projects that are either Hetch Hetchy Project facilities (referred to as "upcountry" facilities) or facilities located in the City (referred to as "in-City" facilities). The following summarizes projected capital spending of the Power Enterprise for upcountry and in-City facilities over the Ten-Year Capital Plan period.

The Ten-Year Capital Plan projects capital spending for upcountry projects as set forth below. Actual spending may differ from the amounts shown as the SFPUC retains broad authority to prioritize and substitute projects in order to meet the organization's needs at any particular time.

#### *Power Infrastructure*

\$121.1 million will be spent on the rehabilitation and upgrades to Hetch Hetchy Project powerhouses, transformers, reservoir pumps and control systems. This category includes rehabilitation of transmission lines/distribution systems and switchyards/substations.

#### *Joint Power/Water Projects*

\$822.2 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 2009 Water Supply Agreement (the "WSA") between the SFPUC and its wholesale water customers. The Power Enterprise's 55% allocable

share of this capital spending totals \$452.2 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 facilities at Moccasin, road improvements, facility security and communication projects.

The largest of the joint power/water projects during the Ten-Year Capital Plan period is Mountain Tunnel. Mountain Tunnel is estimated to cost approximately \$628 million, with the Power Enterprise's 55% allocable share totaling \$345.4 million. Mountain Tunnel conveys upcountry water supply from Kirkwood Powerhouse to Priest Reservoir. Mountain Tunnel has been in-service for over 80 years, with only minimal maintenance work performed over that time. Recent inspections showed considerable repair work needed over nine miles of lined tunnel sections. 90% of estimated costs are expected to be incurred over the last five years of the Ten-Year Capital Plan period.

The SFPUC is currently negotiating an amendment to the WSA to further clarify the allocation of new asset capital cost recovery between the retail and wholesale water customers. This negotiation may result in certain joint power/water project costs being recategorized as power-related projects in the Ten-Year Capital Plan, resulting in an approximate \$23.8 million increase to Power Enterprise project expense over the next ten years.

Projected capital spending for in-City projects is as follows:

#### *Streetlights*

\$29 million will be spent for streetlights located in the City. Specifically, funds will be spent for various street lighting improvements, replacement and repairs, including engineering and construction costs.

#### *Treasure Island*

\$29 million will be spent for projects servicing Treasure Island and Yerba Buena Island, including the replacement of the existing overhead electric distribution system.

#### *Renewable Generation*

\$26 million will be spent on certain renewable generation projects, including the planning, development and implementation of new electricity generation resources to provide clean, local generation. Such spending includes \$10 million over Fiscal Year 2014-15 and Fiscal Year 2015-16 for the GoSolarSF Program.

#### *Transmission/Distribution*

\$2.3 million will be spent to convert 2,000 PG&E meters to Power Enterprise meters, and to provide electrical connection to the new Transbay Transit Center.

#### *Energy Efficiency*

\$9 million will be spent on investments to reduce facility operating costs for General Fund and Enterprise customers, improving system functionality and reducing the environmental impact of energy use.

Proceeds of the 2015 Series A Bonds are expected to fund upcountry infrastructure projects that are part of the Fiscal Year 2014-15 Capital Plan. The following are brief descriptions of these projects.

*Hydroelectric Transmission Lines/Distribution System (Moccasin to Warnerville (Don Pedro Crossing))* – Rehabilitation of certain facilities used for the transmission and distribution of hydroelectricity.

*Other Powerhouse Projects; Holm Unit 2* – Hydroelectric generation powerhouse upgrade, renewal and replacement projects, including upgrades to the Holm Powerhouse generator unit number 2.

*Hydroelectric Powerhouse Control Upgrade* – Upgrade to powerhouse protection, control and indication monitoring systems used in connection with hydroelectric generation.

*Switchyard/Substation Rehabilitation related to Hydroelectricity (Warnerville SW Phase I)* – Renewal and replacement of switchyard and substation components for hydroelectricity transmission.

*Oil Containment Upgrades for Holm & Kirkwood Hydroelectric Facilities* – Upgrades to the oil separation systems within the hydroelectric powerhouse to prevent oil discharges.

*Moccasin GSU Transformers & Oil Containment* – Replace existing transformers within the hydroelectric powerhouse.

*Kirkwood Powerhouse Refurbishment & TSOV Replacement* – Rehabilitation of Kirkwood hydroelectric powerhouse to increase the life expectancy of the asset.

*Moccasin Hydroelectric Generator Rewind* – Rewind Moccasin Powerhouse generator units 1 and 2.

*Moccasin Hydroelectric Switchyard Upgrade* – Renewal and replacement of switchyard and substation components at Moccasin Switchyard for hydropower transmission.

## **Environmental Considerations**

Projects undertaken by the SFPUC are generally subject to CEQA and certain projects involving the participation of federal agencies are also subject to the National Environmental Policy Act of 1969, as amended (42 U.S.C. Section 4321).

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. Any action or proceeding challenging the SFPUC’s determination must be brought within 30 days following the filing of such notice. 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 SFPUC gives careful attention to environmental considerations. All projects are evaluated under the SFPUC’s environmental impact review procedures, developed in compliance with federal and State laws and regulations.



## FINANCIAL OPERATIONS

### General

The SFPUC is a department of the City and, as such, the financial operations of its three enterprises are included in the Comprehensive Annual Financial Report of the City and shown as enterprise funds. *The City's Comprehensive Annual 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 on the basis of proprietary fund types and are included as enterprise funds of the City. The activities of the Power Enterprise are accounted for with a set of self-balancing accounts that comprise assets, liabilities, 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 U.S. generally accepted accounting principles. 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 applicable Governmental Accounting Standards Board ("GASB") pronouncements, as well as statements and interpretations of the Financial Accounting Standards Board ("FASB"), 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 budget is a part of the overall budget prepared bi-annually by the City. The SFPUC's two-year proposed budget is prepared by SFPUC staff and then submitted to the Commission for approval before being submitted to the Mayor. The Mayor's Office reviews and may amend the SFPUC's proposed budget, and then incorporates the proposed budget into the total City 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.

### Rate-Setting Process; Rates

#### General

The California Constitution permits the City, like other municipalities within the State, 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 provision of utility services under its jurisdiction pursuant to Section 8B.125 of the Charter, including rates contained in the SFPUC's agreements with various parties (for example, the Districts) for the sale of

electricity. Commission action on all 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 fails to act within 30 days the rates shall become effective without further Board action. 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.

In addition, under Charter Section 8B.125, in setting retail rates, fees and charges (which exclude charges to the City for certain utility services), for example, to Hunters Point Shipyard customers, 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 the CPUC or to other limitations or requirements of law.

#### ***SFPUC Citizens Advisory Committee and Rate Fairness Board***

The Public Utilities Commission 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. The CAC is comprised of seventeen appointees. Each member of the Board of Supervisors may appoint one member who must be a resident of his or her 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 City water user, one who has knowledge of engineering or financial management and one who represents a regional or statewide environmental organization.

Proposition E, approved by City voters on November 5, 2002 ("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 his or her designee; the Controller or his or her designee; the Director of the Mayor's Office of Public Finance or his or her designee; two residential City retail customers, consisting of one appointed by the Mayor and one by the Board of Supervisors; and two City 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 December 2010 to determine the cost of service for existing municipal and public agency customers as well as cost of service and projected electric load from retail redevelopment areas, including Hunters Point Shipyard and Treasure Island. This study concluded that the average cost of service for redevelopment, municipal and public agencies load was 9.0 cents/kWh. As of May 2014, the average Power Enterprise cost of service is 9.9 cent/kWh.

The SFPUC anticipates completing the next independent rate and cost-of-service study in 2015 to determine the cost of service for municipal and public agency customers, retail commercial and residential customers, and other new customer classes as identified by the Power Enterprise, for rates to be effective on July 1, 2016.

#### *Municipal Rate-Setting Actions*

In Fiscal Year 1989-90, the Commission adopted Resolution 89-0355 prescribing that rates for City Enterprise departments be based on comparable PG&E rates and that these rates rise or fall automatically with changes in applicable rates authorized by the CPUC. This resolution also defined cost of service for municipal departments to include maintenance and operations expenses, taxes, depreciation and repair and replacement expenses over time.

In Fiscal Year 1998-99, a rate study was conducted which concluded that the City's General Fund department rates did not reflect cost-of-service. This resulted in the implementation of the first of a three-step rate increase in General Fund department rates ranging from 0 cent/kWh to 3.125 cent/kWh. The second and third step increases were not implemented. In Fiscal Year 2001-02, some General Fund departments had their rates increased to 3.75 cent/kWh in connection with certain events that occurred during the California energy crisis. In Fiscal Year 2004-05, the Board of Supervisors adopted Resolution No. 431-04 which established a policy that appropriations for General Fund departments be sufficient to cover cost-of-service electric rates. However, no rate increases were implemented immediately in connection with such policy. In December 2011, the Commission adopted Resolution 11-0203 increasing average municipal customer rates by 0.5 cent/ kWh per year for four years beginning in Fiscal Year 2012-13. The first of these four-year scheduled rate increases went into effect on July 1, 2012. However, two years into the four-year agreement, in February 2014, the SFPUC reopened negotiations to increase the City General Fund department electric rates in effort to balance the Power Enterprise's Ten-Year Financial Plan, as required by the City Charter. In May 2014, the Commission adopted Resolution 14-0089 increasing average municipal customer rates by 1.0 cent/ kWh per year for two years beginning in Fiscal Year 2014-15 through Fiscal Year 2015-16. As a result of this resolution, City General Fund departments are charged an average 0.475cent/kWh, resulting in a discount of approximately 45% relative to comparable PG&E rates.

As prescribed by Resolution 89-0355, the SFPUC continues to set electric rates for City Enterprise departments based on comparable PG&E rates that adjust automatically with changes authorized by the CPUC.

Average rates for Fiscal Year 2013-14 to Fiscal Year 2015-16, reflected in the following Table 8, are based on the municipal department or other public or governmental agency's existing SFPUC established rate.

**TABLE 8**  
**MUNICIPAL CUSTOMERS AVERAGE RATES FOR FY 2013-14 TO 2015-16**

<u>Municipal Power Service Rates</u>	<b>FY 2013-14 Historical Rates</b>	<b>FY 2014-15 Adopted Rates<sup>(1)</sup></b>	<b>FY 2015-16 Adopted Rates<sup>(1)</sup></b>
General Fund Department Activities and Related Customers	4.75 ¢/kWh	5.75 ¢/kWh	6.75 ¢/kWh
Public Libraries	8.13 ¢/kWh	9.13 ¢/kWh	10.13 ¢/kWh
Moscone Convention Center Facilities	6.70 ¢/kWh	7.70 ¢/kWh	8.70 ¢/kWh
San Francisco General Hospital	1.70 ¢/kWh	2.70 ¢/kWh	3.70 ¢/kWh
Laguna Honda Hospital	2.49 ¢/kWh	3.49 ¢/kWh	4.49 ¢/kWh
Public Buildings and San Francisco City Street Lights	1.00 ¢/kWh	2.00 ¢/kWh	3.00 ¢/kWh
Enterprise Departments (tied to PG&E rates)	13.00 ¢/kWh	12.82 ¢/kWh	13.19 ¢/kWh

<sup>(1)</sup> Adopted by the Commission.

Source: SFPUC.

***Retail Rate-Setting Actions***

As a result of the SFPUC's 2011 electric rate study, the SFPUC adopted public electric rates for new retail customers in redevelopment areas in the City, including Hunter's Point Shipyard and Treasure Island. On February 8, 2011, the Commission adopted Resolution 11-0021 establishing SFPUC electric rates for residential and commercial retail redevelopment effective on July 1, 2012. These rates were established such that they covered maintenance and operations expenses, taxes, depreciation and repair and replacement expenses over time. This resolution also established an annual adjustment for these rates based on the lesser of the annual percentage in the Consumer Price Index or the change of the PG&E scheduled rates effective each successive July 1.

**TABLE 8A  
ADOPTED RETAIL ELECTRICITY RATES FOR FY 2014-15**

<b>Retail Electric Service Rates</b>	<b>FY 2014-15 Adopted Rates<sup>(1)</sup></b>
<b>Residential R-1 Rates</b>	
Monthly Service Charge	\$2.91/account
Winter Season	
For the first 278 kWh	\$0.11451/kWh
For the next 83 kWh	\$0.13018/kWh
All additional kWh	\$0.26649/kWh
Summer Season	
For the first 278 kWh	\$0.11451/kWh
For the next 83 kWh	\$0.13018/kWh
All additional kWh	\$0.26649/kWh
<b>Commercial C-1 Rates</b>	
Monthly Service Charge – Single Phase Service	\$14.47/account
Monthly Service Charge – Poly-Phase Service	\$21.73/account
Winter Season	
All kWh	\$0.14049/kWh
Summer Season	
All kWh	\$0.1963/kWh

<sup>(1)</sup> Adopted by the Commission

Source: SFPUC.

To date, the Power Enterprise has prepared service standards, developed system plans and specifications, acquired materials and equipment, and initiated construction of primary distribution facilities. Under an existing development agreement, the Power Enterprise will also construct, own, and operate the electric distribution infrastructure required to provide retail electric service to residential and commercial customers in a portion of the former Hunter's Point Shipyard.

***Contractual Rate-Setting Actions***

In addition, as of Fiscal Year 2013-14, MID and TID Class 1 rates were \$0.03593/kWh and \$0.03212/kWh, respectively. Consistent with existing agreements, the amounts paid by the Districts adjust annually based on actual costs. The MID and TID Class 1 rate contract is up for renegotiation with Modesto and Turlock Irrigation Districts in spring 2015 for rates to be effective on July 1, 2015.

***PG&E Rates***

The rates PG&E may charge for various categories of electricity delivery within the City ("PG&E Rates") are established by the CPUC. PG&E Rates are adjusted by the CPUC from time to time. The electric rates charged by the SFPUC to its customers are sometimes limited by or established with reference to PG&E rates. See – **Rate Setting Actions**. The establishment of higher or lower PG&E Rates by the CPUC will result in increases or decreases in the electric rates charged by the SFPUC to affected customers and increased or decreased Revenues. The SFPUC does not have control over PG&E's rates. The City does actively participate in PG&E's general rate case and rate design proceedings at the CPUC, however.

**Billing and Collection Procedures**

The SFPUC bills 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) or are made pursuant to an average billing agreement. The SFPUC may impose a late charge or disconnect service for nonpayment.

**TABLE 9  
HISTORICAL REVENUES  
FOR FISCAL YEARS ENDED JUNE 30  
(IN THOUSANDS)**

<b>Revenues:</b>	<b>2010</b>	<b>2011</b>	<b>2012</b>	<b>2013</b>	<b>2014</b>
<b>Charges for Services</b>	\$ 97,236	\$108,454	\$ 94,680	\$ 96,398	\$ 98,693
<b>Municipal Sales</b>	60,344	62,425	62,568	64,156	73,114
<b>Other Retail Sales<sup>(1)</sup></b>	18,089	19,476	21,034	18,146	20,101
<b>Wholesale Sales</b>	18,803	26,554	11,079	14,097	5,478
<b>Rent &amp; concessions</b>	135	140	134	135	123
<b>Interest &amp; investment income</b>	2,081	1,965	2,589	139	1,289
<b>Other non-operating revenues<sup>(2)</sup></b>	6,456	7,424	5,800	4,892	5,798
<b>Totals</b>	<b>\$105,908</b>	<b>\$117,983</b>	<b>\$103,203</b>	<b>\$101,564</b>	<b>\$ 105,903</b>

<sup>(1)</sup> Includes revenues recovered from services to Treasure Island. Such amounts are excluded from Revenues under the Indenture.

<sup>(2)</sup> Includes revenues from Trans Bay Cable LLC licenses and cap and trade allowances. Such amounts are excluded from Revenues under the Indenture.

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. See **HISTORICAL OPERATING RESULTS** and **THE PUBLIC UTILITIES COMMISSION – Employee Relations**. 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.

**Employee Benefit Plans**

**Retirement System Plan Description.** The SFPUC participates in the City’s single employer defined benefit retirement plan (the “Plan”) which is administered by the San Francisco City and County Employees’ Retirement System (the “Retirement System” or “SFERS”). The Plan covers substantially all full time employees of the SFPUC along with other employees of the City. 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. The Charter and City Administrative Code are the authorities that establish and amend the benefit provisions and employer obligations of the Plan.

**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, 30 Van Ness Avenue, Suite 3000, San Francisco, CA 94102, or by calling (415) 487-7020.

The funded status of the Plan as of June 30, 2013 (the most recent date for which information is available) was as follows:

Actuarial Liability	\$ 20,224,776,000
Actuarial Value of Assets	<u>\$ 16,303,397,000</u>
Unfunded Actuarial Liability	\$ 3,921,379,000
Funded Status (assets/liabilities)	80.6%

Source: SFPUC.

**Retirement System Funding Policy.** Contributions to the basic Plan are made by both the SFPUC and its employees. Employee contributions are mandatory. Employee contribution rates for Fiscal Years 2013-14, 2012-13 and 2011-12 varied from 7.5% to 13.0% as a percentage of covered payroll. Due to certain bargaining agreements, the SFPUC contributed from 0.5% to 8.0% of covered payroll on behalf of some employees.

The contributions made by the Power Enterprise for the prior three Fiscal Years were as follows:

<u>Fiscal Year</u>	<u>Actuarially Determined Rate as a Percentage of Covered Payroll</u>	<u>Contribution (000s)</u>	<u>Percent of Required Contribution</u>
2011-12	18.09%	\$2,497	100%
2012-13	20.70	2,731	100
2013-14	20.80	3,400	100

Source: SFPUC.

**Projected Future Contributions and Pension Costs.** Employer-share contribution rates increased from 18.1% in Fiscal Year 2011-12 to 20.7% in Fiscal Year 2012-13 for covered City employees, as adopted by the Retirement Board in March 2012. Required employer-share rates included in the City's projections are based on a projection scenario provided by the Cheiron consulting firm, which assumes that the pension fund achieves a 0% investment return in Fiscal Year 2011-12 and achieves its target investment return in each subsequent year. This projection assumes required employer-share contribution rates of 25.5% in Fiscal Year 2013-14, 28.6% in Fiscal Year 2014-15, and 27.6% in Fiscal Year 2015-16. These rates are assumed to be reduced by the floating employee contribution rates included in the pension cost sharing provisions of Proposition C, as well as the increased employee contributions included in the amended labor agreements with the Police Officers Association and Firefighters Local 798. Together, these provisions result in \$38.1 million in savings to the City in Fiscal Year 2012-13, growing to \$56.5 million in Fiscal Year 2015-16. Despite these savings, SFERS employer contribution costs are projected to increase by \$10.2 million in Fiscal Year 2012-13, \$47.1 million in Fiscal Year 2013-14, and \$36.6 million in Fiscal Year 2014-15, followed by a decrease of \$12.8 million for Fiscal Year 2015-16.

**Health Care Benefits.** Health care benefits of the SFPUC employees, retired employees and surviving spouses are financed by beneficiaries and by the City through the City and County of San Francisco Health Service System (the "Health Service System"). The Power Enterprise's annual contribution for both active and retired employees amounted to approximately \$4.547 million and \$4.621 million in Fiscal Years 2012-13 and 2013-14, respectively.

Included in these amounts are \$906,000 and \$846,000 for 2014 and 2013, respectively, to provide post-retirement benefits for retired employees, on a pay-as-you-go basis.

The City has determined a Citywide Annual Required Contribution ("ARC"), interest on net other post-employment benefits other than pensions ("OPEB") obligation, ARC adjustment, and OPEB cost based upon an actuarial valuation performed in accordance with GASB 45, by the City's actuaries. The ARC represents a level of

funding that, if paid on an ongoing basis, is projected to cover the normal cost of each year and any unfunded actuarial liabilities (or funding excess) amortized over 30 years. The City's allocation of the OPEB related costs to the SFPUC for the year ended June 30, 2014 based upon its percentage of Citywide payroll costs is presented below.

The following table shows the components of the City's annual OPEB allocations for the Power Enterprise for the years ending June 30, 2014 and 2013, for the amount contributed to the plan, and changes in the City's net OPEB obligation:

**TABLE 10**  
**ANNUAL OPEB OBLIGATION FOR THE POWER ENTERPRISE**  
**FOR FISCAL YEARS ENDING JUNE 30, 2013 AND JUNE 30, 2014**  
**(IN THOUSANDS)**

	2014	2013
Annual required contribution	\$ 2,238	\$ 2,576
Interest on net OPEB obligation	469	361
Adjustment to ARC	(390)	(300)
Annual OPEB cost (expense)	2,317	2,637
Contribution made	(906)	(846)
Increase in net OPEB obligation	1,411	1,791
Net OPEB obligation -- beginning of year	11,038	9,247
Net OPEB obligation -- end of year	12,449	11,038

Source: SFPUC, Financial Services.

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.

**Unfunded Actuarial Accrued Liability.** The City's Unfunded Actuarial Accrued Liability ("UAAL") was \$4.4 billion for Fiscal Year 2013-14. The amount allocable to the Power Enterprise, as of July 1, 2014, was \$28.93 million.

**Pension and Health Care Cost Reforms.** City voters have implemented pension and health care cost reforms in recent years to help mitigate future cost increases. These include the following propositions:

**Proposition B.** Proposition B was approved by voters in June 2008 and 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. Employees hired before January 10, 2009, became eligible to participate in the retirement health care system after 5 years of service and the employer paid 100% of the contribution. Proposition B also stated that a separate Retiree Health Care Trust Fund would be created to pay for the City's future costs related to retiree health care. This trust fund will be funded by employer and employee contributions for employees hired on or after January 10, 2009. These new employees would contribute up to 2% of their pre-tax pay and employers would contribute 1%.

**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 65 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 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. Proposition C limits cost-of-living adjustments for SFERS retirees.

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.

#### **Allocation of Costs**

The SFPUC allocates various common costs it incurs among the Hetch Hetchy Water and Power, 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 the years ended June 30, 2014 and 2013, the SFPUC allocated \$12.426 million and \$12.848 million, respectively, in administrative costs to Hetch Hetchy Water and Power, which is included in the financial statements under various expense categories. These costs are then allocated to 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**

The City performs certain administrative services such as maintenance of accounting records and investment of cash for all fund groups within the City. For the years ended June 30, 2014 and 2013, the Commission allocated \$9.341 million and \$9.589 million, respectively, in administrative costs to the Power Enterprise, which is included in the financial statements under various expense categories, using the periodically reviewed department allocation model.

The overhead allocation paid to the General Fund of the City by Power Enterprise was \$62,000 and \$402,000 for the years ended June 30, 2014 and 2013, respectively, and is included in other operating expenses in the financial statements.

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. These charges totaling approximately \$5.892 million and \$5.002 million for the years ended June 30, 2014 and 2013, respectively, are included in services provided by other departments in the Power Enterprise's 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 million with one more payment of \$274,000 due in Fiscal Year 2014-15. The expenses and prepayments among the three SFPUC Enterprises are based on 525 Golden Gate occupancy. As of Fiscal Year ended June 30, 2014, the Power Enterprise's allocable shares of expenses and prepayments were \$16,000 and \$984,000, at June 30, 2013 were \$15,000 and \$714,000, respectively.

The SFPUC makes payments to the City relating to the financing of the SFPUC's headquarters. 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 cost of the service provided to them. See -- **Rate-Setting Process; Rates**.

## **Debt Management and Fund Balance Reserve Policies**

The SFPUC has established Debt Management Policies and Procedures for debt financing under its jurisdiction. These policies apply to all SFPUC enterprises, including the Power Enterprise, and are intended to enable the SFPUC to effectively manage its debt issuance and debt management practices. The policies and procedures are reviewed biannually and revised, as necessary, with Commission approval. The most recent revisions were approved on April 9, 2013. The Commission may also approve exceptions to adherence to these policies.

The SFPUC also established a Fund Balance Reserve Policy in 2010. This policy is applied to the long-term financial planning of all SFPUC enterprises, including the Power Enterprise. The Fund Balance Reserve Policy states that operating and capital plans, budgets and rates will be projected and proposed for adoption such that all bond indenture requirements are met or exceeded and that Operating Fund Balance Reserves meet one or more of the following: total at least 15% of annual revenues; total at least 15% of annual expenditures; and result in Debt Service Coverage, on a bond indenture basis, including fund balance reserves available to pay debt service, of at least 1.25 times.

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

## **Investment of SFPUC Funds**

The SFPUC's pooled deposits and investments are invested pursuant to State law and the investment policy established by the City Treasurer and overseen by the Treasury Oversight Committee. This policy seeks the preservation of capital, liquidity and yield, in that order of priority. The policy addresses the soundness of the financial institutions that hold City assets and the types of investments permitted by the California Government Code. The earned income yield for Fiscal Year 2013-14 was 0.73%.

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 exposure at risk. Risk assessments and purchasing of insurance coverage are collaboratively coordinated by the SFPUC Enterprise Risk Management department and the City's Office of Risk Management. With certain exceptions, the City and the SFPUC'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 identified and, if more economical, the SFPUC administers, adjusts, settles, defends, and pays claims from budgeted resources. When economically more viable or where required by debt financing covenants, the SFPUC obtains commercial insurance.

At least annually, the City reviews and actuarially determines general liability and workers' compensation risk exposures. The SFPUC generally does not maintain commercial earthquake coverage.

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

<b>Primary Risks</b>	<b>Typical Coverage Approach</b>
General Liability	Self-Insured
Property	Purchased Insurance & Self-Insured
Electronic Data Processing	Purchased Insurance & Self-Insured
Workers' Compensation	Self-Insured through City-Wide Pool
<b>Other Risks</b>	<b>Typical Coverage Approach</b>
Surety Bonds	Purchased and Contractually Transferred
Professional Liability	Combination of Self-Insured, and Contractual Risk Transfer
Errors & Omissions	Combination of Self-Insured, and Contractual Risk Transfer
Builders Risk	Purchased Insurance & Contractual Risk Transfer
Employment Practices Liability	Purchased Insurance
Public Officials Liability	Purchased Insurance
Crime	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 program is for revenue-generating facilities, debt-financed facilities, and mandated coverage to meet statutory or contractual requirements.

The SFPUC has purchased a Public Officials Liability policy for all public officials with financial oversight responsibilities, including Commissioners, the General Manager and the Chief Financial Officer. The policy also includes employment practices liability coverage.

Additionally, the SFPUC has implemented an Enterprise Risk Management program for the Business & Financial Services Bureau and is currently in the process of establishing an ERM program for the Power Enterprise. The framework provides a strategic approach to managing operational risks of the organization through a coordinated process that identifies, assesses, treats, and monitors risks. The SFPUC acknowledges the importance of aligning strategic planning to the risk management process and intends to continue implementation across the organization.

**Capital Project Risk Management.** For capital construction projects, the SFPUC has utilized traditional contractual risk transfer, owner-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.

Bonds are required, unless Builder's Risk is 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 table below are based on the tables contained in the Financial Statements entitled "Statements of Revenues, Expenses and Changes in Net Assets" and "Statements of Cash Flows" for the Fiscal Years listed. See **APPENDIX B – SFPUC POWER ENTERPRISE FINANCIAL STATEMENTS**. The calculation of debt service coverage includes net operating income and funds not budgeted to be spent in the next twelve months and legally available to pay debt service, as permitted under the Indenture.

**TABLE 11**  
**POWER ENTERPRISE**  
**HISTORICAL REVENUES AND OPERATION AND MAINTENANCE EXPENSES**  
**FOR FISCAL YEARS ENDED JUNE 30**  
**(IN THOUSANDS)<sup>(1)</sup>**

	2010	2011	2012	2013	2014
<b>Revenues:</b>					
Charges for services <sup>(1)</sup>	\$ 97,236	\$ 108,454	\$ 94,680	\$ 96,398	\$ 98,693
Rent & concessions	135	140	134	135	123
<b>Subtotal Operating Revenues</b>	<b>\$ 97,371</b>	<b>\$ 108,594</b>	<b>\$ 94,814</b>	<b>\$ 96,533</b>	<b>\$ 98,816</b>
Interest & investment income	2,081	1,965	2,589	139	1,289
Other non-operating revenues <sup>(1)</sup>	6,456	7,424	5,800	4,892	5,798
<b>Subtotal Non-Operating Revenues</b>	<b>\$ 8,537</b>	<b>\$ 9,389</b>	<b>\$ 8,389</b>	<b>\$ 5,031</b>	<b>\$ 7,087</b>
<b>Total Revenues</b>	<b>\$ 105,908</b>	<b>\$ 117,983</b>	<b>\$ 103,203</b>	<b>\$ 101,564</b>	<b>\$ 105,903</b>
<b>Expenses:</b>					
Personnel services	\$ 25,755	\$ 28,474	\$ 31,719	\$ 33,564	\$ 33,762
Contractual services	5,627	6,063	4,726	4,956	4,063
Purchased power & related costs	17,726	19,269	21,539	20,891	26,215
Materials and supplies	1,540	1,638	1,694	1,671	2,075
Depreciation	8,539	9,582	9,796	11,079	11,128
Services provided by other departments and general & administrative	4,018	7,101	7,947	8,665	9,711
Other operating expenses <sup>(2)</sup>	23,129	14,114	16,186	12,433	14,086
<b>Subtotal operating expenses</b>	<b>\$ 86,334</b>	<b>\$ 86,241</b>	<b>\$ 93,607</b>	<b>\$ 93,259</b>	<b>\$ 101,040</b>
Interest expense	722	562	99	1,641	1,574
Other non-operating expenses	5,321	4,403	3,179	3,025	2,485
<b>Total expenses</b>	<b>\$ 92,377</b>	<b>\$ 91,206</b>	<b>\$ 96,885</b>	<b>\$ 97,925</b>	<b>\$ 105,099</b>
Change in net position before transfers	13,531	26,777	6,318	3,639	804
Transfers in (out)	(1,400)	(184)	(2)	(196)	(38)
Change in net position	12,131	26,593	6,316	3,443	766
Net position at beginning of year	\$ 331,090	\$ 343,221	\$ 369,814	\$ 375,848	\$ 379,284
Net position at end of year	\$ 343,221	\$ 369,814	\$ 376,130	\$ 379,284	\$ 376,146

<sup>(1)</sup> See Table 9.

<sup>(2)</sup> Includes operating programmatic expenses associated with facility maintenance.

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

## 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 2015 Series A Bonds. The following discussion is not meant to be a comprehensive or definitive list of the risks associated with an investment in the 2015 Series A 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 2015 Series A Bonds or lead to a decrease in the market value and/or in the liquidity of the 2015 Series A 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 Cost of the Power Enterprise and principal of and interest on the 2015 Series A 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 voters, property owners, taxpayers or persons obligated to pay fees and charges. Among other matters, general and local economic conditions, weather or climatic conditions, natural or other disasters 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.

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 Cost 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 2015 Series A 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 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 2015 Series A 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 2015 Series A Bonds. The 2015 Series A 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.

### Unavailability of Generation or Transmission

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 the City, increasing the Power Enterprise's cost of purchased power. See, for example, **THE HETCH HETCHY PROJECT -- Physical Condition of Facilities**.

The Power Enterprise's CIP addresses rehabilitation and upgrade needs of a number of Power Facilities. With respect to infrastructure relating solely to the Power Enterprise, the CIP addresses: (i) rehabilitation and upgrades of the Hetch Hetchy Project's generating assets, including powerhouses, transformers, reservoir pumps and control systems, (ii) rehabilitation of transmission assets and increased maintenance of facilities and transmission line clearance zones, (iii) rehabilitation of streetlights; and (iv) other improvements intended to increase reliability. The CIP also includes projects whose components relate to infrastructure shared by the Power Enterprise and the Water Enterprise, including the Mountain Tunnel. Built between 1917 and 1925, the Mountain Tunnel extends 19.2 miles from the Early Intake Dam to the Priest Reservoir. The lower 12 miles are lined. The lining shows signs of deterioration which will likely increase over time. The risk of failure of the Mountain Tunnel, defined as a loss of 25% carrying capacity, is currently low but will increase over time. Failure could cause up to six or more months of water supply disruption, affect approximately 27% of the Hetch Hetchy Project's generating capacity and require significant adjustments in operations of the Power Facilities. The current preferred option for remedying the problem is to construct a bypass tunnel, but the SFPUC has engaged an expert Technical Advisory Panel to review the alternatives analysis and will be recommending further consideration of a focused lining repair project. See **POWER ENTERPRISE CAPITAL PROGRAM**.

***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 - Rainfall Variability and Drought**.

***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 the State. See – **Seismic Considerations.**

**Other Natural and Man-Made Disasters.** Other natural 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; 2013 Rim Fire.**

**Operational Liability.** The SFPUC operates high voltage transmission lines through right of way corridors that extend approximately 200 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. SFPUC is undertaking a condition assessment of its transmission line right of way and has identified potential hazards, 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 are being taken to enhance warning notification, exclude access, or remove trees or vegetation, and a capital improvement program is under development in order to establish safe clearance zones where deficient. The cost and complexity of remedying all such potential hazards is such that such measures are unlikely to be fully implemented within the scope of the current ten year CIP, and the SFPUC is working to prioritize its remedial actions. See **POWER ENTERPRISE CAPITAL PROGRAM.**

**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 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 Power Enterprise.

**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.

**Labor Actions.** The Charter prohibits SFPUC and other City employees from striking. Nonetheless, a work stoppage or other labor action could limit the SFPUC's ability to operate the Power Facilities and adversely impact Revenues. See **FINANCIAL OPERATIONS – Labor Relations.**

**Unavailability of Transmission.** The Power Enterprise's transmission assets are interconnected to the California Independent System Operator's (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 or increase the Power Enterprise's reliance on the CAISO's transmission network, which could result in increased transmission costs to the Power Enterprise. See **THE POWER ENTERPRISE – Transmission and Distribution.**

**Proposals to Restore Hetch Hetchy Valley.** Various environmental advocates have from time to time proposed the dismantling of O'Shaughnessy Dam with the aim of draining Hetch Hetchy Reservoir and restoring the



river valley, most recently through a ballot initiative ordinance to require a planning process for the restoration of Hetch Hetchy Valley, which was rejected by City voters in the November 2012 election. Any such proposals, if implemented, would increase the operating and capital expenses of the Power Enterprise, primarily due to increased power purchases. See **THE HETCH HETCHY PROJECT – Proposals to Restore Hetch Hetchy Valley**.

### **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 the State. The San Andreas Fault lies immediately west of the City, and the Hayward fault is approximately fifteen miles to the east. 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. Another was the 1868 Hayward earthquake along the Hayward Fault. The most recent significant earthquake was the October 1989 Loma Prieta earthquake on the San Andreas Fault, which had a magnitude of 7.1 on the Richter scale and an epicenter near Santa Cruz, approximately fifty-five miles south of the City. According to a recent United States Geological Survey, a significant earthquake along these or other faults is probable during the period the 2015 Series A Bonds will be outstanding. A significant earthquake in the City could adversely affect 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 zone in the State 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 certain generation and transmission assets, including the powerhouse, substation and switchyard, it expects to make modifications designed to make the refurbished assets meet or exceed current seismic standards. The SFPUC has no current plans to retrofit the buildings housing such assets, however.

The SFPUC's in-City assets, including for example certain renewable energy generating facilities and streetlights, along with facilities in other locations in the larger Bay Area, such as substations located near SFO, of the 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 the City.

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.

### **Construction Related Risks**

Construction projects for the Power Enterprise are subject to ordinary construction risks and delays applicable to projects of their kind, such as (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; or (vi) 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.

#### **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 2015 Series A 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 the City. The Raker Act further grants the City the right to sell electricity generated by the Hetch Hetchy Project to meet municipal and pumping needs, including without limitation its own needs and the needs of the Districts, and for commercial purposes, provided that such electricity may not be sold for resale to a private corporation or individual. See **THE HETCH HETCHY PROJECT.** 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 and pumping needs. Any additional excess electricity supplies are sold to certain retail customers and then on the wholesale market to public entities—primarily other POU's—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, public agency, and retail customers and long-term wholesale customers, with excess generation sold on the wholesale short-term markets. The municipal, public agency and retail customers, which include City enterprise department customers and General Fund department customers, together comprise on average approximately 81% of all electricity sales. Power Enterprise department customers made up 41% of all Power Enterprise electricity sales in Fiscal Year 2013-14. General Fund department customers accounted for approximately 26% of all Power Enterprise electricity sales in Fiscal Year 2013-14. Long-term wholesale agreements, including those with the Districts, represent on average approximately 19% of all Power Enterprise electricity sales. The Power Enterprise also enters into short-term wholesale market arrangements to sell excess supply, primarily during the run-off spring season. In Fiscal Year 2013-14, short-term wholesale market sales were approximately 0.2% of all the Power Enterprise's electricity sales.

As the Power Enterprise's retail customers are concentrated primarily in and around the City, changes in the financial condition of, or the health of the economy in, the City 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.

#### **Economic, Political, Social and Environmental Conditions**

Prospective investors are encouraged to evaluate current and prospective economic, political, social, and environmental conditions as part of an informed investment decision. 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) fluctuations in business production, consumer prices, or financial markets, unemployment rates, 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.

### **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, and purchased power costs, will not increase, perhaps substantially. See **FINANCIAL OPERATIONS – Operation and Maintenance Expenses**.

### **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. See **DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION**. A portion of the SFPUC's retail electric rates are set with reference to PG&E's customer rates, while a portion are set at lower levels with reference to costs of service. See **FINANCIAL OPERATIONS -- Rate-Setting Process; Rates**. Higher wholesale energy market prices may increase operating costs of the Power Enterprise and reduce Net Revenues.

California's (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 statewide 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 electricity demand. 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 Pacific Gas & Electric, Company ("PG&E") rates for each customer class. PG&E is an investor-owned utility that provides natural gas and electric service to about 5.1 million electric and gas customers in Northern and Central California. 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**.

### **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**.

### **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 the State 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 the City 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 **THE HETCH HETCHY PROJECT – 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**

### *Impact of a City Bankruptcy*

State law permits the City, under certain circumstances, to file for bankruptcy protection under chapter 9 of the United States Bankruptcy Code (the "Bankruptcy Code"). As of the date hereof, there have been no public discussions by any City officials, including the Mayor, the Board of Supervisors or the City Attorney, with respect to any potential chapter 9 filing by the City. Third parties cannot bring involuntary bankruptcy proceedings against the City. A bankruptcy filing by the City could have adverse effects on the payment of, and security for, certain accounts receivable maintained by the SFPUC. Following a bankruptcy filing, the City and one or more of its departments, many of which are customers of the Power Enterprise, might fail to pay or otherwise reduce or delay payments for services provided by the SFPUC prior to the date of such filing; and the Power Enterprise might be unable to recover all or any portion of its claims for such amounts in the bankruptcy case. The City and its departments would be obligated, however, to pay for continuing utility services provided by the SFPUC after the date of any such bankruptcy filing.

The SFPUC, being an enterprise department of the City, cannot itself file for bankruptcy protection. Should the City become a debtor in a bankruptcy proceeding, then Net Revenues collected after the date of the bankruptcy filing should be subject to the lien of the Indenture if they are "special revenues" under the Bankruptcy Code. "Special revenues" are defined under the Bankruptcy Code to include, among other things, receipts by local governments from the ownership, operation or disposition of projects or systems that are primarily used to provide utility services. The SFPUC believes that Net Revenues are "special revenues" within the meaning of the Bankruptcy Code. No assurance can be given that a court would not hold that the Net Revenues are not special revenues. Were the Net Revenues determined not to be "special revenues," then Net Revenues collected after the commencement of a bankruptcy case would likely not be subject to the lien of the Indenture. The holders of the 2015 Series A Bonds may not be able to assert a claim against any property of the SFPUC or the Power Enterprise other than the Net Revenues, and were these amounts no longer subject to the lien of the Indenture following commencement of a bankruptcy case, then there could thereafter be no amounts from which the holders of the 2015 Series A 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 from which the special revenues are derived, before they are applied to other obligations. This rule applies regardless of the provisions of the transaction documents. The law is not clear as to whether, or to what extent, Net Revenues would be considered to be "derived" from the projects or utility system of the SFPUC. To the extent that Net Revenues are determined to be both special revenues and derived from such projects or system, the SFPUC may be able to use Net Revenues to pay necessary operating expenses connected such projects or system, before the remaining Net Revenues are turned over to the Trustee to pay amounts owed to the holders of the 2015 Series A Bonds. It is not clear precisely which expenses would constitute necessary operating expenses.

If the City is in bankruptcy, the parties (including the holders of the 2015 Series A Bonds) may be prohibited from taking any action to collect any amount from the SFPUC or to enforce any obligation of the SFPUC, unless the permission of the bankruptcy court is obtained. These restrictions may also prevent the Trustee from making payments to the holders of the 2015 Series A Bonds from funds in the Trustee's possession.

The City may be able to borrow additional money as a debtor in bankruptcy that is secured by a lien on any of its property (including Net Revenues), which lien could have priority over the lien of the Indenture, or to cause some Net Revenues to be released to it, free and clear of lien of the Indenture, in each case provided that the bankruptcy court determines that the rights of the Trustee and the holders of the 2015 Series A Bonds will be adequately protected. The City may also be able, without the consent and over the objection of the Trustee and the

holders of the 2015 Series A Bonds, to alter the priority, interest rate, payment terms, collateral, maturity dates, payment sources, covenants (including tax-related covenants), and other terms or provisions of the Indenture and the 2015 Series A Bonds, provided that the bankruptcy court determines that the alterations are fair and equitable.

There may be delays in payments on the 2015 Series A 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 2015 Series A Bonds, or result in losses to the holders of the 2015 Series A 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 2015 Series A Bonds.

#### ***Impact of a PG&E Bankruptcy***

PG&E provides the Power Enterprise with wholesale services through an agreement regulated by FERC, which terminates July 1, 2015. Under this wholesale agreement, PG&E provides transmission and distribution services to deliver Hetch Hetchy Project and other generation to the Power Enterprise's customers. Rates for these services under the FERC approved contract reflect PG&E's cost of service. After July 1, 2015, the Power Enterprise expects these services to be provided under FERC-adopted open-access tariffs for transmission and distribution service, using the same PG&E-owned facilities. A bankruptcy filing by PG&E could have adverse effects on the payment of, and security for, certain accounts receivable maintained by the SFPUC. Following a bankruptcy filing, PG&E might fail to pay or otherwise reduce or delay payments for services provided by the SFPUC prior to the date of such filing; and the Power Enterprise might be unable to recover all or any portion of its claims for such amounts in the bankruptcy case. PG&E would be obligated, however, to pay for continuing utility services provided by the SFPUC after the date of any such bankruptcy filing.

A PG&E bankruptcy could increase Operation and Maintenance Expenses of the Power Enterprise were the Power Enterprise forced to purchase replacement services. See **THE POWER ENTERPRISE – Power Service in San Francisco – Pacific Gas & Electric Company**.

#### **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 the State. The opinions to be delivered by Co-Bond Counsel, concurrently with the issuance of the 2015 Series A Bonds, that the 2015 Series A Bonds constitute valid and binding also 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 2015 Series A Bonds will be similarly qualified. See **APPENDIX D – PROPOSED FORM OF OPINION OF CO-BOND COUNSEL**.

If the SFPUC fails to comply with its covenants under the Indenture or to pay principal of or interest on the 2015 Series A Bonds, there can be no assurance that the available legal remedies will be adequate to protect the interests of the holders of the 2015 Series A Bonds.

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

As discussed under **TAX MATTERS**, interest with respect to the 2015 Series A 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 execution and delivery of the 2015 Series A Bonds as a result of future acts or omissions of the SFPUC in violation of its covenants to comply with requirements of the Internal Revenue Code of 1986, as amended. Should such an event of taxability occur, the 2015 Series A Bonds are not subject to prepayment or any increase in interest rate.

In December 1999, as a part of a larger reorganization of the Internal Revenue Service ("IRS"), the IRS commenced operation of its Tax Exempt and Government Entities Division (the "TE/GE Division"), as the successor to its Employee Plans and Exempt Organizations division. The TE/GE Division has a subdivision that is specifically devoted to tax-exempt bond compliance. Public statements by IRS officials indicate that the number of tax-exempt bond examinations is expected to increase significantly under the new TE/GE Division. There is no assurance that, if an IRS examination of the 2015 Series A Bonds were undertaken, it would not adversely affect the secondary market value of the 2015 Series A Bonds.

#### **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 2015 Series A Bonds to be subject, directly or indirectly, in whole or in part, to federal income taxation or to be subject to or exempted from 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 2015 Series A 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. The SFPUC undertakes no responsibility to maintain its current credit ratings on the 2015 Series A Bonds or to oppose any such downward revision, suspension or withdrawal. 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 of the 2015 Series A Bonds.

#### **Secondary Market**

There can be no guarantee that there will be a secondary market for the 2015 Series A Bonds or, if a secondary market exists, that the 2015 Series A 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**

Compliance with certain of the covenants contained in the Indenture 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** on the inside front cover of this Official Statement.

#### **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 2015 Series A Bonds. There may be other risks inherent in ownership of the 2015 Series A 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 2015 Series A Bonds.

## DEVELOPMENTS IN THE ELECTRICITY MARKETS AND REGULATION

### Structure of the Energy Market Today

The State'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 the State, 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. The State imports about 1/4th of its energy needs from outside of the State.

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). 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 percent 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 percent of California's and a small part of Nevada's electric grid. The CAISO was created in 1996 as a result of California's restructuring of the electric industry with the adoption of Assembly Bill ("AB") 1890 (Stats. 1996, Ch. 854). 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 that the State's electric transmission system be made 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.

In addition to operating and scheduling electricity on its transmission system, the CAISO is the only balancing authority in the Western grid to operate a day-ahead, hour-ahead, and real-time energy market matching buyers and sellers and facilitating over 28,000 market transactions every day. Although the vast majority of the State's electric needs are met through longer-term business relationships (such as 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 get paid the price bid by the most expensive generator that needs to operate within the constrained area.

The CAISO is currently in the process of expanding access to its energy markets to entities outside its boundaries by creating an Energy Imbalance Market ("EIM"). The EIM would allow load-serving entities located outside of the CAISO to access the CAISO's real-time energy market to better balance supply and demand. PacifiCorp and NV Energy have already committed to participate in the EIM market. The EIM market is expected to begin operation in November 2014.

The CAISO also ensures the reliability of its electric system by imposing resource adequacy ("RA") standards upon all load-serving entities ("LSE") within the CAISO. The RA requirements obligate each LSE to procure in advance a specified amount of electricity capacity that can 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);
- 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; and
- A local capacity requirement ("LCR") to ensure that the CAISO has sufficient capacity in certain sub-regions to ensure reliable service in the event of local reliability issues.

The CAISO also engages in long-term transmission planning, identifying upgrades or expansions that are needed to meet reliability requirements, provide economic benefits, connect new generation to the grid, and/or achieve 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 located within the footprint of the CAISO. The Power Enterprise uses the CAISO's transmission system to deliver electricity to Power Enterprise load that is not connected to the Power Enterprise's transmission system as well as to buy and sell surplus electricity. The Power Enterprise's high-voltage electric transmission lines are not formally part of the CAISO system, but the Power Enterprise and CAISO have an agreement that coordinates the operation of the Power Enterprise's transmission lines with the CAISO system. The Power Enterprise's transmission lines are also connected to two other balancing authorities that serve the SFPUC's two largest wholesale customers. These are TID, which operates as its own balancing authority, and the Balancing Authority of Northern California, which covers MID.

#### ***Expiration of the PG&E Interconnection Agreement***

The Power Enterprise currently uses a FERC-approved interconnection agreement with PG&E to provide for the delivery of electricity over the CAISO-operated grid to meet Power Enterprise loads in the City and surrounding region. With the expiration of this agreement on July 1, 2015, the Power Enterprise expects to take transmission service from the CAISO under the CAISO's open access transmission tariffs. See **THE POWER ENTERPRISE – Transmission and Distribution**.

#### ***Resource Adequacy Requirements***

The Hetch Hetchy Project provides sufficient capacity to meet the SFPUC's system-wide and flexible capacity obligations to the CAISO. The Hetch Hetchy Project is not within any of the CAISO's load capacity requirement zones and thus cannot be used to meet the SFPUC's load capacity requirements. Currently the CAISO requires an load serving entity, such as the SFPUC, to show that it has procured approximately 90% of its needed resource adequacy ("RA") capacity, a level equal to 100% of the SFPUC's total forecast load on a monthly basis plus a 15% reserve, a year in advance and 100 percent of its RA needs a month ahead. The CAISO is now working with stakeholders to develop multi-year RA rules that would require load serving entities to show how they will meet their RA obligations several years in advance.

#### ***Load Granularity***

For purposes of reliability and to ensure the efficient dispatch of the electric system, the CAISO currently determines electricity prices at almost 3,000 different points ("nodes") within its system. To avoid complexity and to facilitate a liquid energy market, the CAISO aggregates the prices set at each node into a single electricity price for each broad region served by the CAISO. The electricity price paid by the SFPUC for any purchases from the CAISO is therefore based on a regional price for all of Northern California. FERC has directed that the CAISO consider disaggregating prices beyond the regional level potentially through the creation of additional regional zones. As the vast majority of the SFPUC's load is located on the San Francisco peninsula, a transmission-limited area with minimal electric generation, the SFPUC could find itself located in a pricing new zone with potentially higher average electricity prices. The CAISO is currently engaged in a stakeholder process to determine how to respond to FERC's request.

#### ***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." POU's like the SFPUC are also generally exempt from FERC regulation, except for regulations pertaining to electric system reliability. POU's 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, that a POU that benefits from the open-access requirements of a FERC-regulated transmission provider must offer comparable open-access to its own transmission system; however 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 POU's, 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 sales of energy to other POU's (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 sales to other POU's 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. The goal of this change was to allow that customers 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 to 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, subject to FERC review and approval. On February 3, 2006, FERC issued Order 672, which certified NERC as the ERO. The reliability standards developed by NERC and adopted by FERC apply to users, owners and operators of transmission elements operated at 100 kilovolts (kV) or higher and real power and reactive power resources connected at 100 kV or higher, as more specifically set forth in each Reliability Standard. Many Reliability Standards have since been approved by FERC.

NERC and its Regional Reliability Organizations (“RRO”) may enforce the Reliability Standards, subject to FERC oversight or FERC may independently enforce the Reliability Standards. The WECC is the RRO for the western region. Potential monetary sanctions include fines of up to \$1 million per violation per day. FERC Order 693 further provided the ERO and RROs with the discretion necessary to assess penalties for such violations, while also having discretion to calculate a penalty without collecting the penalty if circumstances warrant. On March 18, 2010, FERC issued a Policy Statement on Penalty Guidelines, which appeared to envision the option of more serious penalties than would be imposed by NERC. NERC and a significant part of the industry challenged that Policy Statement and several other orders issued the same day with respect to reliability. FERC suspended the effectiveness of the policy in order to receive comments and, on September 17, 2010, FERC issued a Revised Policy Statement on Penalty Guidelines, which clarified and tempered some of its prior statements, although the revised guidelines maintained that it was appropriate to use the US Criminal Sentencing Guidelines Model as an analytical tool for assessing penalties. FERC further clarified that its Revised Policy Statement on Penalty Guidelines would be applied only to investigations conducted by FERC.

#### ***United States Environmental Protection Agency Proposed Clean Power Plan***

On June 2, 2014, the United States Environmental Protection Agency (the “EPA”) released its proposed Clean Power Plan. This plan seeks to reduce GHG emissions from existing electric generating plants by 30 percent before 2030. Under the plan, each state is assigned an emission performance goal to be achieved. California’s interim electricity emissions goal set by the EPA is an average of 556 lbs carbon dioxide (“CO<sub>2</sub>”)/ MWh for the 2020-2029 period, with a final goal of 537 lbs CO<sub>2</sub>/MWh in 2030. The plan proposes to provide each state the flexibility to achieve its goal through the use of a number of different measures including: 1) increasing the efficiency of coal-fired power plants; 2) increasing the effective use of existing natural gas-fired power plants; 3) increasing the use of renewable generation; and 4) expanding state energy efficiency programs.

Under the EPA’s proposed plan, each state would have to submit a state implementation plan (“SIP”) to the EPA by June 2016. For California, the SIP would be developed by the California Air Resources Board (“CARB”), which is working with the CPUC and CAISO to evaluate the proposed targets and develop potential compliance strategies.

CARB has stated that if California achieves its already adopted GHG reduction goals, the state would also meet its emissions goal under the EPA’s proposed plan. See – **California State Law and Regulation**. As all of the SFPUC’s electric generating resources are already GHG-free, the effect of the EPA’s proposal on the SFPUC is expected to be minimal. To the extent that electricity prices rise generally as a result of the plan’s implementation, the SFPUC could potentially benefit, as it is currently a net seller of electricity and GHG-free electricity may attract a price premium relative to fossil-based electric generation. To the extent that California relies on energy efficiency and renewable energy activities to meet the plan’s requirements, there is a potential for increased federal oversight of these activities to ensure that stated GHG reductions are achieved.

#### ***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 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 Don Pedro Project**.

## **California State Law and Regulation**

### *State Constitution*

Art. XI, Sec. 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 listing of state legislation that affects the Power Enterprise’s electric operations and the SFPUC’s compliance with these requirements.

### *Assembly Bill 32; CARB Scoping Plan; Cap and Trade*

State Assembly Bill 32 (“AB 32”), known as the Global Warming Solutions Act of 2006, requires 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 need 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 are proposals to increase energy efficiency, promote renewable energy and distributed generation, and the increased 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 2015 the program will be expanded to include the province of Quebec, Canada.

The cap-and-trade program covers sources accounting for 85% of California’s GHG emissions, the largest program of its type in the United States. The cap-and-trade program will be implemented in phases. The first phase of the program (until December 31, 2014) will introduce a hard emissions cap on electric utilities and large industrial sources emitting more than 25,000 metric tons of carbon dioxide-equivalent greenhouse gases (“CO<sub>2</sub>e”) per year. In 2015, the program will be expanded to cover distributors of transportation, natural gas, and other fossil fuels. The cap will decline about 2 percent in 2014, and 3 percent annually from 2015 to 2020. The cap-and-trade program will require covered entities to retire compliance instruments (e.g., allowances) for each metric ton of CO<sub>2</sub>e they emit.

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 CO<sub>2</sub> and the Power Enterprise does not, and has a policy not to, 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 CO<sub>2</sub>e level that would trigger a compliance obligation.

As part of a transition process, initially most of the carbon allowances will be distributed for free. As the program matures, the amount of allowances allocated for free will be progressively reduced and covered entities will be required to buy allowances at auction. The cap-and-trade program will also allow covered entities to use offset credits for compliance purposes (not exceeding 8% of a regulated entity’s compliance obligation). Offsets must be obtained from certified projects in sectors that are not regulated under the cap-and-trade program. These include urban forest projects, reforestation projects, destruction of ozone-depleting substances, and methane management projects.

Under the cap-and-trade program, electric distribution utilities (“EDU”) such as the SFPUC receive a designated amount of allowances set by regulation through 2020. One purpose of these allowances is to at least partially compensate EDUs 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. All allowances provided to electric distribution utilities must be used to benefit the utility's ratepayers. Because the SFPUC does not have a compliance obligation under the program, the SFPUC sells most of its allowances through the auction process and uses the proceeds to benefit ratepayers as required by the cap-and-trade program.

#### ***Future AB 32; CARB Scoping Plan; Cap and Trade***

AB 32 sets a long-term goal for California to reduce its GHG emissions to 80% below 1990 levels by the year 2050. This would require continuing reductions in GHG emissions beyond 2020 to reach this goal. As required by AB 32, CARB is developing a revised scoping plan identifying potential future measures to reduce GHG emissions. The plan currently identifies a continued "decarbonization" of the electric sector; further electrification of motor vehicles; and continued use of energy efficiency activities as potential sources of further GHG reductions.

#### **Renewable Portfolio Standard**

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

The CRERA generally requires all electric utilities and energy service providers to procure 33% of their retail energy needs from renewable energy by 2020, with interim targets starting at 20% for the 2011-2013 period and progressively ramping up to 33% by 2020. The CRERA recognizes that imposing such an obligation upon the SFPUC would have resulted in the SFPUC 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 Act established an alternative compliance obligation for the SFPUC. Provided that the SFPUC 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 in most years the SFPUC has historically been able to meet 95% to 100% of its electric demands from its Hetch Hetchy Project generation the SFPUC generally expects to have to procure only small amounts of eligible renewable energy annually to meet its RPS obligations under the Act.

For POU's, the initial responsibility for enforcing the Act's requirements is placed upon the POU. To ensure that the SFPUC is able to 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 SFPUC's requirements under the RPS, identifies the exceptions allowed under the RPS that would allow the SFPUC 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). The SFPUC's latest adopted Procurement Plan forecasts that the SFPUC will be able to meet its RPS obligations with its own electric generation during years of normal or above-average hydroelectric generation. Only during years of below average hydroelectric generation does the SFPUC anticipate needing to purchase additional eligible renewable energy to meet its RPS obligations. The SFPUC forecasts that such purchases will be small relative to total demand. The cost to procure these resources is expected to be consistent with the SFPUC's annual budgets for purchased energy.

#### **Resource Adequacy Requirements**

Public Utilities Code 9620 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 resource adequacy requirements established by the CAISO. FERC has authorized the CAISO to apply its own Resource Adequacy rules to any utility that has not adopted a Resource Adequacy program. To comply with Public Utilities Code 9620, on May 23, 2006 the SFPUC adopted, in its Resolution 06-0087, an Interim Utility Resource

Adequacy Plan. The Plan established a 15% reserve margin and established forecasting and reporting requirements to meet the Act's requirements.

### **Energy Loading Order**

State Senate Bill 1037, effective January 1, 2006, requires POU's 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, CEC, and 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 (the "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, signed by the Governor on September 29, 2006, requires that POU's 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 and submitted its latest report through the California Municipal Utilities Association on March 15, 2014.

### **Community Choice Aggregation Service**

State law allows a local government entity to sell electricity directly to customers within the entity's jurisdiction through a Community Choice Aggregation ("CCA") program. 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 local utility subject to CPUC tariffs. Customers within a CCA's jurisdiction may choose to opt-out of the program.

The SFPUC developed a CCA program called CleanPowerSF for customers in the City. After many years of study and development, however, the City has not implemented CleanPowerSF. The Power Enterprise anticipates that if the City were to implement a CCA program, few if any current Power Enterprise customers would become CCA customers, since Power Enterprise electric service already offers a clean energy portfolio and cheaper costs than those mandated by the CPUC tariff for CCA service. Funding to develop a CCA program in the future could include some seed funding from the Power Enterprise, though no new funds are currently included in its current capital plan. To date approximately \$9.0 million has been appropriated for CCA Development and Assessment, of which approximately \$3.7 million is currently available for project spending. The Indenture, however, requires that any City-wide retail electric power program be a Separate System. Following initial funding, the CCA program may operate with financial independence using revenues collected from customers. It is possible that a CCA program would purchase excess electricity from the Power Enterprise when available.

### **California Solar Initiative**

State Senate Bill 1 ("SB 1"), adopted in 2006 and effective as of January 1, 2007, established the California Solar Initiative and set a statewide goal to install 3,000 MW of new solar energy systems on California rooftops within ten years, and established requirements to have solar energy systems installed on 50% of new residential developments within 13 years.

SB 1 requires POU's, including the SFPUC, to establish a program that meets the POU obligations under the initiative. Through its municipal solar and GoSolarSF programs, the SFPUC has already exceeded its 2017 targets under SB 1. The SFPUC will continue to file annual reports on the progress of its SB 1 solar programs to the California Energy Commission.

## Energy Storage

State Assembly Bill 2514 requires that by October 1, 2014 “the governing board of each local publicly owned electric utility shall determine appropriate targets, if any, for the utility to procure viable and cost-effective energy storage systems to be achieved by December 31, 2016, and December 31, 2020.” In response to this legislative requirement, the SFPUC resolved, in its Resolution 14-0147, that the SFPUC has no near-term need for energy storage services apart from the potential use of energy storage to fulfill Local Resource Adequacy Capacity requirements, which is not cost-effective at this 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.

## State Law Requirements Affecting Investor-Owned Utilities

The California State Constitution (Article XII) gives the CPUC the authority to regulate “Private 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.” The CPUC does not have authority over the rates and services offered by publicly-owned utilities such as the SFPUC, but the CPUC’s regulation of investor-owned utilities, particularly PG&E, can affect the SFPUC’s operations. PG&E, Trans Bay Cable and the direct access energy service providers are subject to extensive regulation by FERC with respect to applicable wholesale transactions and electricity transmission.

Almost all 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 Hetch Hetchy Project and other energy supplies to its load. These activities are regulated by FERC. See – **Federal Law and Regulation**. Where SFPUC provides electric service to retail customers in the City (other than municipal load), it does so in competition with PG&E.

## 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) the effects of possible manipulation of the electric markets; (s) natural disasters or other physical calamities, including, but not limited to, earthquakes and flood; (t) climate change and related regulations; and (u) 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 the legislative and regulatory bodies and other sources in the public domain, and potential purchasers of the 2015 Series A 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

### Proposition 218 and Proposition 26

Proposition 218, a State ballot initiative known as the "Right to Vote on Taxes Act," was approved by State voters in 1996. The initiative added Articles XIII C and XIII D to the California Constitution. Article XIII D 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 XIII D explicitly exempts fees and charges for the provision of electric service from its provisions.

Article XIII C 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 XIII C, 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 XIII D. As the terms "fees" and "charges" are not defined in Article XIII C, however, its extension of the initiative powers may apply not only to "property-related" fees and charges, as defined in Article XIII D, but also, for example, to fees and charges for the provision of electric services which are exempted from Article XIII D. 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.

On November 2, 2011, the voters approved Proposition 26 ("Proposition 26"), which amended Article XIII C to provide that a "tax" means any levy, charge or exaction of any kind imposed by a local government. Proposition 26, however, excepted from its scope, among other things, (1) 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, and (2) assessments and property-related fees imposed in accordance with the provisions of Article XIII D. 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.

The SFPUC believes that its rates and charges for electric service are not subject to the voter approval requirements under Proposition 26. The SFPUC further believes that its fees and charges for electric service do not exceed the reasonable costs to the Power Enterprise of providing those services. The SFPUC, however, is unable to predict how Proposition 26 will be interpreted by the California courts or what its ultimate impacts on the SFPUC will be.

### 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. Under the Charter, however, the SFPUC may

issue revenue bonds to finance buildings, fixtures or equipment necessary to comply with an order of a state or federal authority, for the reconstruction or replacement of existing water facilities or electric power facilities or combinations of water and electric power facilities and to finance certain equipment or facilities for renewal energy and energy conservation. See **OBLIGATIONS PAYABLE FROM REVENUES – Authority for Issuance of Revenue Bonds and Other Obligations Payable from Revenues.**

In June 1998 the electorate of the City approved Proposition H which, subject to certain exceptions, including a limited exception to raise rates to pay debt service on voter-approved debt, froze the SFPUC's water rates through July 1, 2006. The SFPUC can give no assurance that the electorate will not seek in the future to freeze or limit rate increases.

#### **Initiative Measures and Charter Amendments**

Articles XIIIIC and XIICD 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 the City, 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 2015 Series A Bonds are to be issued;
- (ii) the validity of any provision of the 2015 Series A 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 will not, in the opinion of the City Attorney, materially impair the ability of the SFPUC to pay principal of or interest on the 2015 Series A 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 2015 Series A Bonds as they become due.

#### **TAX MATTERS**

In the opinion of Orrick, Herrington & Sutcliffe LLP and Curlls Bartling, P.C., Co-Bond Counsel, based on an analysis of existing laws, regulations, rulings and court decisions, and assuming, among other matters, the accuracy of certain representations and compliance with certain covenants, interest on the 2015 Series A Bonds is excluded from gross income for federal income tax purposes under Section 103 of the Internal Revenue Code of 1986 (the "Code") and is exempt from State of California personal income taxes. Co-Bond Counsel are further of the opinion that interest on the 2015 Series A Bonds is not a specific preference item for purposes of the federal individual or corporate alternative minimum taxes, although Co-Bond Counsel observe that interest on the 2015 Series A Bonds is included in adjusted current earnings when calculating federal corporate alternative minimum taxable income. A complete copy of the proposed opinion of Co-Bond Counsel is set forth in Appendix C hereto.



The difference between the issue price of any maturity of the 2015 Series A Bonds with an issue price less than par and the amount to be paid at maturity of such 2015 Series A Bonds (excluding amounts stated to be interest and payable at least annually over the term of such 2015 Series A Bonds) constitutes "original issue discount," the accrual of which, to the extent properly allocable to each owner thereof, is treated as interest which is excluded from gross income for federal income tax purposes and State of California personal income taxes. For this purpose, the issue price of a particular maturity of the 2015 Series A Bonds is the first price at which a substantial amount of such maturity of the 2015 Series A Bonds is sold to the public (excluding bond houses, brokers, or similar persons or organizations acting in the capacity of underwriters, placement agents or wholesalers). The original issue discount with respect to any maturity of the 2015 Series A Bonds accrues daily over the term to maturity of such 2015 Series A Bonds on the basis of a constant interest rate compounded semiannually (with straight-line interpolations between compounding dates). The accruing original issue discount is added to the adjusted basis of such 2015 Series A Bonds to determine taxable gain or loss upon disposition (including sale, redemption, or payment on maturity) of such 2015 Series A Bonds. Owners of the 2015 Series A Bonds should consult their own tax advisors with respect to the tax consequences of ownership of 2015 Series A Bonds with original issue discount, including the treatment of purchasers who do not purchase such 2015 Series A Bonds in the original offering to the public at the first price at which a substantial amount of such 2015 Series A Bonds are sold to the public.

2015 Series A Bonds purchased, whether at original issuance or otherwise, for an amount greater than their principal amount payable at maturity (or, in some cases, at their earlier call date) ("Premium Bonds") will be treated as having amortizable bond premium. No deduction is allowable for the amortizable bond premium in the case of obligations, like the Premium Bonds, the interest on which is excluded from gross income for federal income tax purposes. However, the amount of tax exempt interest received, and a purchaser's basis in a Premium Bond, will be reduced by the amount of amortizable bond premium properly allocable to such purchaser. Owners of Premium Bonds should consult their own tax advisors with respect to the proper treatment of amortizable bond premium in their particular circumstances.

The Code imposes various restrictions, conditions and requirements relating to the exclusion from gross income for federal tax purposes of interest on obligations such as the 2015 Series A Bonds. The SFPUC has made certain representations and has covenanted to comply with certain restrictions designed to assure that the interest on the 2015 Series A Bonds will not be included in federal gross income. Inaccuracy of these representations or failure to comply with these covenants may result in the interest on the 2015 Series A Bonds being included in federal gross income, possibly from the date of issuance of the 2015 Series A Bonds. Bond Counsel has not undertaken to determine (or to inform any person) whether any actions taken (or not taken) or events occurring (or not occurring) after the date of issuance of the 2015 Series A Bonds may affect the tax status of the interest on the 2015 Series A Bonds or the value of the 2015 Series A Bonds.

Although Co-Bond Counsel have rendered an opinion that the interest portion on the 2015 Series A Bonds is excluded from gross income for federal income tax purposes, the ownership or disposition of the 2015 Series A Bonds and the accrual or receipt of amounts treated as interest thereon may otherwise affect a 2015 Series A Bond owner's tax liability. The nature and extent of these other tax consequences will depend upon each 2015 Series A Bond owner's particular tax status and the 2015 Series A Bond owner's other items of income or deduction. Co-Bond Counsel express no opinion regarding any such other tax consequences.

Current and future legislative proposals, if enacted into law, clarification of the Code or court decisions may cause interest on the 2015 Series A Bonds to be subject, directly or indirectly, in whole or in part, to federal income taxation or to be subject to or exempted from state income taxation, or otherwise prevent 2015 Series A Bond owners from realizing the full current benefit of the tax status of such interest. For example, Representative Dave Camp, Chair of the House Ways and Means Committee, released draft legislation that would subject interest on the 2015 Series A Bonds to a federal income tax at an effective rate of 10% or more for individuals, trusts, and estates in the highest tax bracket, and the Obama Administration proposed legislation that would limit the exclusion from gross income of interest on the 2015 Series A Bonds to some extent for high-income individuals. The introduction or enactment of any such future legislative proposals, clarification of the Code or court decisions may also affect, perhaps significantly, the market price for, or marketability of, the 2015 Series A Bonds. Prospective purchasers of the 2015 Series A Bonds should consult their own tax advisors regarding the potential impact of any pending or proposed federal or state tax legislation, regulations or litigation, as to which Co-Bond Counsel express no opinion.

The opinion of Co-Bond Counsel is based on current legal authority, covers certain matters not directly addressed by such authorities, and represents Co-Bond Counsels' judgment as to the proper treatment of the 2015 Series A Bonds for federal income tax purposes. It is not binding on the Internal Revenue Service ("IRS") or the courts. Furthermore, Co-Bond Counsel cannot give and have not given any opinion or assurance about the future activities of the SFPUC, or about the effect of future changes in the Code, the applicable regulations the interpretation thereof or the enforcement thereof by the IRS. The SFPUC has covenanted, however, to comply with the requirements of the Code.

Co-Bond Counsel's engagement with respect to the 2015 Series A Bonds ends with the issuance of the 2015 Series A Bonds, and, unless separately engaged, Co-Bond Counsel are not obligated to defend the SFPUC or the owners of the 2015 Series A Bonds regarding the tax-exempt status of the 2015 Series A Bonds in the event of an audit examination by the IRS. Under current procedures, parties other than the SFPUC, and its appointed counsel, including the owners of the 2015 Series A Bonds, would have little, if any, right to participate in the audit examination process. Moreover, because achieving judicial review in connection with an audit examination of tax-exempt bonds is difficult, obtaining an independent review of IRS positions with which the SFPUC legitimately disagrees, may not be practicable. Any action of the IRS, including but not limited to selection of the 2015 Series A Bonds for audit, or the course or result of such audit, or an audit of bonds presenting similar tax issues may affect the market price for, or the marketability of, the 2015 Series A Bonds, and may cause the SFPUC or the owners of the 2015 Series A Bonds to incur significant expense.

#### CERTAIN LEGAL MATTERS

The validity of the 2015 Series A Bonds and certain other legal matters are subject to the approving opinion of Orrick, Herrington & Sutcliffe LLP, San Francisco, California, and Curls Bartling P.C., Oakland, California, Co-Bond Counsel. Complete copies of the proposed form of Bond Counsel opinion is contained in Appendix D hereto. Certain legal matters will be passed upon for the SFPUC by the City Attorney and by Orrick, Herrington & Sutcliffe LLP, Disclosure Counsel to the SFPUC. Certain legal matters will be passed upon for the Underwriter by Nossaman LLP. None of Co-Bond Counsel, Disclosure Counsel or Underwriter's Counsel undertakes any responsibility for the accuracy, completeness or fairness of 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 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 statements or information presented in this Official Statement and has not undertaken to independently verify any of such statements or information. Rather, the SFPUC is solely responsible for the accuracy and completeness of the statements and information contained in this Official Statement. Upon the issuance of the 2015 Series A Bonds, Disclosure Counsel will deliver a letter to the SFPUC which advises the SFPUC, subject to the assumptions, exclusions, qualifications and limitations set forth therein, that no facts came to attention of the attorneys at such firm rendering legal services in connection with such firm's role as Disclosure Counsel which caused them to believe that this Official Statement as of its date and as of the date of issuance of the 2015 Series A Bonds contained or contains any untrue statement of a material fact or omitted or omits to state any material fact necessary to make the statements therein, in light of the circumstances under which they were made, not misleading. No purchaser or holder of the Series 2013 Bonds, or other person or party other than the SFPUC, will be entitled to or may rely on such letter of Orrick, Herrington & Sutcliffe LLP's having acted in the role of Disclosure Counsel to the SFPUC.

#### RATINGS

The 2015 Series A Bonds have been rated "[ ]" by Fitch, Inc. ("Fitch"), One State Street Plaza, New York, New York, and "[ ]" by Standard & Poor's Ratings Services, a Standard & Poor's Financial Services LLC business, 55 Water Street, New York, New York ("Standard & Poor's"). The ratings assigned by Fitch and Standard & Poor's express only the views of the rating agencies. The explanation of the significance of the ratings may be obtained from Fitch and Standard & Poor's, respectively. 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 2015 Series A Bonds.

## UNDERWRITING

The 2015 Series A Bonds are being purchased by Wells Fargo Bank, National Association (the "Underwriter"). The Underwriter has agreed to purchase the 2015 Series A Bonds at a purchase price of \$\_\_\_\_\_ (comprised of the principal amount of the 2015 Series A Bonds, plus a reoffering premium on the 2015 Series A Bonds of \$\_\_\_\_\_, less an underwriter's discount in the amount of \$\_\_\_\_\_).

The purchase contract pursuant to which the 2015 Series A Bonds are being sold provides that the Underwriter will purchase all of the 2015 Series A Bonds if any 2015 Series A Bonds are purchased, and the obligation to make such purchase is subject to certain terms and conditions set forth in such purchase contract, the approval of certain legal matters by counsel and certain other conditions. The Underwriter may offer and sell the 2015 Series A Bonds to certain dealers and others at a price lower than the offering prices stated on the inside cover page hereof. The offering prices may be changed from time to time by the Underwriter.

Wells Fargo Securities is the trade name for certain securities-related capital markets and investment banking services of Wells Fargo & Company and its subsidiaries, including Wells Fargo Bank, National Association.

Wells Fargo Bank, National Association ("WFBNA"), the underwriter of the 2015 Series A Bonds, has entered into an agreement (the "Distribution Agreement") with its affiliate, Wells Fargo Advisors, LLC ("WFA"), for the distribution of certain municipal securities offerings, including the 2015 Series A Bonds. Pursuant to the Distribution Agreement, WFBNA will share a portion of its underwriting or remarketing agent compensation, as applicable, with respect to the 2015 Series A Bonds with WFA. WFBNA also utilizes the distribution capabilities of its affiliates, Wells Fargo Securities, LLC ("WFSLLC") and Wells Fargo Institutional Securities, LLC ("WFIS"), for the distribution of municipal securities offerings, including the 2015 Series A Bonds. In connection with utilizing the distribution capabilities of WFSLLC, WFBNA pays a portion of WFSLLC's expenses based on its municipal securities transactions. WFBNA, WFSLLC, WFIS, and WFA are each wholly-owned subsidiaries of Wells Fargo & Company.

## FINANCIAL STATEMENTS

Audited Financial Statements of the SFPUC's Power Enterprise (the "Financial Statements") for the Fiscal Year ended June 30, 2014 are attached as Appendix B. See **APPENDIX B – SFPUC POWER ENTERPRISE FINANCIAL STATEMENTS**. Such financial statements have been audited by KPMG LLP (the "Auditor"), independent certified public accountants.

*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 has covenanted for the benefit of the Owners of the 2015 Series A Bonds to provide certain financial information and operating data not later than 270 days after the end of the SFPUC's Fiscal Year (which currently ends on June 30), commencing with the report for Fiscal Year 2013-14 (the "Annual Report") and to provide notices of the occurrence of certain enumerated events, if material. The Annual Report will be filed by the SFPUC with the MSRB through EMMA.

The specific nature of the information to be contained in the Annual Report or the notices of material events is summarized in **APPENDIX D – FORM OF CONTINUING DISCLOSURE CERTIFICATE**. These covenants have been made in order to assist the Underwriter in complying with Securities and Exchange Commission Rule 15c2-12(b)(5) (the "Rule"). The SFPUC is not in default with respect to any previous undertaking made with regard to said Rule.

Due to administrative oversight, the SFPUC failed to file through EMMA until June 4, 2013, audited financial statements for the Water Enterprise and Wastewater Enterprise for the Fiscal Year ended June 30, 2012. The balance of the annual reports for such Fiscal Year were filed in a timely manner and the audited financial statements were publicly available prior to the filing deadline. The SFPUC has not otherwise failed to comply in all material respects with its previous undertakings under the Rule within the last five years.

#### **FINANCIAL ADVISORS**

Public Financial Management, Inc., San Francisco, California, and Kitahata & Company, San Francisco, California, are acting as financial advisors to the SFPUC with respect to the 2015 Series A Bonds (the "Co-Financial Advisors"). The Co-Financial Advisors have assisted the SFPUC in the preparation of this Official Statement and in other matters relating to the planning, structuring, execution and delivery of the 2015 Series A Bonds. The Co-Financial Advisors have 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 Co-Financial Advisors assume no responsibility for the accuracy or completeness of any of the information contained herein. The Co-Financial Advisors will not purchase or make a market in any of the 2015 Series A Bonds.

A portion of the compensation to be received by the Co-Financial Advisors from the SFPUC for services provided in connection with the planning, structuring, execution and delivery of the 2015 Series A Bonds is contingent upon the sale and delivery of the 2015 Series A 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.

#### **APPROVAL AND EXECUTION**

The execution and delivery of this Official Statement has been authorized by the Board of Commissioners of the SFPUC.

PUBLIC UTILITIES COMMISSION OF THE CITY AND  
COUNTY OF SAN FRANCISCO

By: \_\_\_\_\_  
General Manager

**APPENDIX A**

**SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE**

**APPENDIX B**

**SFPUC POWER ENTERPRISE FINANCIAL STATEMENTS**

**APPENDIX C**

**PROPOSED FORM OF OPINION OF CO-BOND COUNSEL**

APPENDIX D

FORM OF CONTINUING DISCLOSURE CERTIFICATE

\$ \_\_\_\_\_  
Public Utilities Commission  
of the  
City and County of San Francisco  
Power Revenue Bonds,  
2015 Series A

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 the power revenue bonds captioned above (the "2015 Series A Bonds"). The 2015 Series A Bonds are being issued pursuant to an authority granted by Sections 9.107(6) and 9.107(8) of the Charter of the City and a First Supplemental Trust Indenture, dated as of March 1, 2015, by and between the SFPUC and \_\_\_\_\_, as trustee (the "Trustee"), which supplements a Trust Indenture, dated as of March 1, 2015 (collectively, the "Indenture"), by and between the SFPUC and the Trustee.

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 2015 Series A Bonds and in order to assist the Participating Underwriter 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 2015 Series A Bonds (including persons holding 2015 Series A Bonds through nominees, depositories or other intermediaries) including, but not limited to, the power to vote or consent with respect to any 2015 Series A Bonds or to dispose of ownership of any 2015 Series A Bonds; or (b) is treated as the owner of any 2015 Series A 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.

"Holder" shall mean either the registered owners of the 2015 Series A Bonds, or, if the 2015 Series A Bonds are registered in the name of The Depository Trust Company as its nominee 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 <http://emma.msrb.org>.



“Official Statement” shall mean the final Official Statement, dated March \_\_, 2015, prepared in connection with the sale and offering of the 2015 Series A Bonds.

“Participating Underwriter” shall mean any of the original underwriters or purchasers of the 2015 Series A Bonds required to comply with the Rule in connection with the offering of the 2015 Series A 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 270 days after the end of the SFPUC’s fiscal year (which currently ends June 30), commencing March \_\_, 2016 with the report for the 2014-15 Fiscal Year, 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(c).

(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.** SFPUC’s Annual Report shall contain or incorporate by reference the following information:

(a) the audited general purpose financial statements of the SFPUC’s power enterprise for the prior fiscal year prepared in accordance with generally accepted accounting principles applicable to governmental entities;

(b) an update of the information contained in the following tables:

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.**

(i) The SFPUC shall give, or cause to be given, notice of the occurrence of any of the following events numbered 1-9 with respect to the 2015 Series A Bonds not later than ten business days after the occurrence of the event:

1. Principal and interest payment delinquencies;

2. Unscheduled draws on debt service reserves reflecting financial difficulties;
3. Unscheduled draws on credit enhancements reflecting financial difficulties;
4. Substitution of credit or liquidity providers, or their failure to perform;
5. Issuance by the Internal Revenue Service of proposed or final determination of taxability or of a Notice of Proposed Issue (IRS Form 5701 TEB) or adverse tax opinions;
6. Tender offers;
7. Defeasances;
8. Rating changes; or
9. Bankruptcy, insolvency, receivership or similar event of the obligated person.

Note: for the purposes of the event identified in subparagraph (9), the event is considered to occur when any of the following occur: the appointment of a receiver, fiscal agent or similar officer for an obligated person in a proceeding under the U.S. 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 obligated person, or if such jurisdiction has been assumed by leaving the existing governmental 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 obligated person.

(ii) The SFPUC shall give, or cause to be given, notice of the occurrence of any of the following events numbered 10-16 with respect to the 2015 Series A Bonds not later than ten business days after the occurrence of the event, if material:

10. Unless described in paragraph 5(a)(5), other material notices or determinations by the Internal Revenue Service with respect to the tax status of the Bonds or other material events affecting the tax status of the 2015 Series A Bonds;
11. Modifications to rights of 2015 Series A Bond holders;
12. Unscheduled or contingent 2015 Series A Bond calls;
13. Release, substitution, or sale of property securing repayment of the 2015 Series A Bonds;
14. Non-payment related defaults;
15. The consummation of a merger, consolidation, or acquisition involving an obligated person or the sale of all or substantially all of the assets of the obligated person, 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; or
16. Appointment of a successor or additional trustee or the change of name of a trustee.

(iii) The SFPUC shall give, or cause to be given, in a timely manner, notice of a failure to provide the annual financial information on or before the date specified in Section 3, as provided in Section 3(b).

(iv) Whenever the SFPUC obtains knowledge of the occurrence of a Listed Event described in Section 5(b), the SFPUC shall determine if such event would be material under applicable federal securities laws.

(v) If the SFPUC learns of the occurrence of a Listed Event described in Section 5(a), or determines that knowledge of a Listed Event described in Section 5(b) would be material under applicable federal securities laws, the SFPUC shall within ten business days of occurrence file a notice of such occurrence with the MSRB in electronic format, accompanied by such identifying information as is prescribed by the MSRB. Notwithstanding the foregoing, notice of the Listed Event described in subsection 5(b)(12) need not be given under this subsection any earlier than the notice (if any) of the underlying event is given to Holders of affected 2015 Series A Bonds pursuant to the Indenture.

**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 2015 Series A Bonds. If such termination occurs prior to the final maturity of the 2015 Series A Bonds, the SFPUC shall give notice of such termination in the same manner as for a Listed Event under Section 5(c).

**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 2015 Series A 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 2015 Series A 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 2015 Series A 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 Underwriter, Holder or Beneficial Owner of the 2015 Series A 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 Underwriter and Holders and Beneficial Owners from time to time of the 2015 Series A Bonds, and shall create no rights in any other person or entity.

Date: \_\_\_\_\_, 2015.

PUBLIC UTILITIES COMMISSION OF THE  
CITY AND COUNTY OF SAN FRANCISCO

By \_\_\_\_\_

Harlan L. Kelly, Jr.  
General Manager

Approved as to Form:

DENNIS J. HERRERA  
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: PUBLIC UTILITIES COMMISSION OF THE  
CITY AND COUNTY OF SAN FRANCISCO  
SAN FRANCISCO POWER REVENUE BONDS,  
2015 SERIES A

Date of Issuance: \_\_\_\_\_, 2015

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 \_\_\_\_\_, 2015. The SFPUC anticipates that the Annual Report will be filed by \_\_\_\_\_.

Dated: \_\_\_\_\_, 2015

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 provided by 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 Bonds or (b) certificates representing ownership interest in or other confirmation of ownership interest in the 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, "Securities" means the 2015 Series A 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](http://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.

11. The information in this section concerning DTC and DTC's book-entry system has been obtained from sources that Issuer believes to be reliable, but Issuer takes no responsibility for the accuracy thereof.

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TRUST INDENTURE

By and Between

PUBLIC UTILITIES COMMISSION OF  
THE CITY AND COUNTY OF SAN FRANCISCO

[NAME OF BANK],  
as Trustee

Dated as of March 1, 2015

Relating to

PUBLIC UTILITIES COMMISSION OF  
THE CITY AND COUNTY OF SAN FRANCISCO  
POWER REVENUE BONDS

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## TRUST INDENTURE

This TRUST INDENTURE, dated as of March 1, 2015 (this "Trust Indenture"), is by and between THE CITY AND COUNTY OF SAN FRANCISCO (the "City"), acting by and through its PUBLIC UTILITIES COMMISSION OF THE CITY AND COUNTY OF SAN FRANCISCO (the "SFPUC"), and [NAME OF BANK], a national banking association, which is authorized by law to accept and exercise the trust powers set forth herein, and its successors in trust and assigns (the "Trustee").

## RECITALS

WHEREAS, pursuant to Sections 4.112 and Article 8B of the Charter of the City (the "Charter"), the SFPUC has exclusive charge of the construction, management, supervision, maintenance, extension, operation, use and control of all water and energy supplies and utilities of the City under the SFPUC's jurisdiction, including the Power Enterprise (the "Power Enterprise"); and

WHEREAS, pursuant to Section 9.107(6) of the Charter, the Board of Supervisors of the City (the "Board") is authorized to provide for the issuance of revenue bonds, without voter approval, issued for the purpose of the reconstruction or replacement of existing water facilities and/or electric power facilities under the jurisdiction of the SFPUC when authorized by resolution adopted by a three-fourths majority of all of the members of the Board; and

WHEREAS, pursuant to Section 9.107(8) of the Charter, the Board is also authorized to provide for the issuance of revenue bonds, without voter approval, issued to finance or refinance the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation; and

WHEREAS, pursuant to Section 9.107 of the Charter, the Board is authorized to provide for the issuance of revenue bonds for SFPUC purposes with the assent of a majority of the voters upon any proposition for the issuance of such revenue bonds; and

WHEREAS, pursuant to Section 9.109 of the Charter, the Board is authorized to provide for the issuance of refunding revenue bonds, without voter approval, upon satisfaction of the requirements set forth therein; and

WHEREAS, pursuant to Section 9.111 of the Charter, except as otherwise expressly provided by the Charter, the City and its commissions, including the SFPUC, have the authority to incur and refund indebtedness as provided by and pursuant to the general laws of the State of California (the "State"); and

WHEREAS, the Board, by its Ordinance No. \_\_\_\_\_, passed on [DATE], 2015, established procedures for the issuance by the SFPUC of revenue bonds for its Power Enterprise and addressed certain other matters in connection therewith, including the establishment, maintenance and collection by the SFPUC and the City of rates of the Power Enterprise sufficient to pay amounts due from revenues of the Power Enterprise and to provide adequate debt service coverage as required by this Trust Indenture; and

WHEREAS, the SFPUC deems it necessary and desirable and in the public interest to authorize the issuance of revenue bonds (the "Bonds"), payable from and secured by the revenues of the Power Enterprise, after the payment of operating and maintenance expenses and any required deposits for repairs and replacements to the Power Enterprise, under and in accordance with Section 9.107, 9.109 and 9.111 of the Charter and pursuant to the terms and conditions set forth herein, for any lawful purposes of the Power Enterprise, which Bonds and the interest thereon shall constitute a lien and charge on the revenues provided for the payment thereof; and

WHEREAS, the Trustee has the power to enter into this Trust Indenture and to execute the trust hereby created and has accepted the trust created hereby; and

WHEREAS, in order to provide for the authentication and delivery of the Bonds, to establish and declare the terms and conditions upon which the Bonds are to be issued and secured and to secure the payment of the principal thereof, Redemption Price, if any, and interest thereon, the SFPUC, pursuant to Resolution No. \_\_\_\_\_, adopted on December \_\_, 2014, has authorized the execution and delivery of this Trust Indenture; and

WHEREAS, the Board of Supervisors, by its Ordinance No. \_\_\_\_, passed on [DATE], 2015, approved the issuance of Bonds and the execution and delivery of this Trust Indenture; and

WHEREAS, all acts and proceedings required by law necessary to make the Bonds, when executed by the SFPUC, authenticated and delivered by the Trustee and duly issued, the valid, binding and legal limited obligations of the SFPUC, and to constitute this Trust Indenture a valid and binding agreement for the uses and purposes herein set forth in accordance with its terms, have been done and taken, and the execution and delivery of the Trust Indenture have been in all respects duly authorized;

NOW, THEREFORE, in order to secure the payment of the principal of, Redemption Price, if any, and interest on, all Bonds at any time issued and Outstanding under this Trust Indenture, according to their tenor, and to secure the performance and observance of all the covenants and conditions therein and herein set forth, and to declare the terms and conditions upon and subject to which the Bonds are to be issued and received, and in consideration of the premises and of the mutual covenants herein contained and of the purchase and acceptance of the Bonds by the Owners thereof, and for other valuable consideration, the receipt of which is hereby acknowledged, the SFPUC does hereby covenant and agree with the Trustee, for the benefit of the Owners from time to time of the Bonds, as follows:

## **ARTICLE I DEFINITIONS AND GENERAL PROVISIONS**

**Section 1.1. Definitions.** Unless the context otherwise requires, the terms defined in this Article shall, for all purposes of this Trust Indenture and of any Supplemental Trust Indenture, have the meanings herein specified:

"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 shall 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 (i), 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 shall 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 shall 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 (i), the interest rate on Paired Bonds shall 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 shall be assumed to become due and payable in equal installments in each Fiscal Year for a period of twenty-five (25) years from the date of calculation; and

(f) the Principal and interest payments on Bonds shall 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;

“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.

“Beneficial Owner Register” means the books maintained for the identification of Beneficial Owners.

“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 Section 5.5.

“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 Section 5.5.

“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 this Trust 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 Section 5.5.

“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 Section 5.6 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 and approved by the Trustee 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 eighteen (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 Section 8.1.

“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 shall be dissolved or liquidated or shall no longer perform the functions of a securities credit rating agency, then the term “Fitch” shall 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 this Trust 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.

“Insolvent” means, with respect to any Person (a) such Person shall have instituted proceedings to be adjudicated a bankrupt or insolvent, shall have consented to the institution of bankruptcy or insolvency proceedings against it, shall 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 shall 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 shall fail to timely controvert an involuntary petition filed against it under the federal Bankruptcy Code, or shall consent to the entry of an order for relief under the federal Bankruptcy Code or shall make an assignment for the benefit of creditors or shall 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, shall have been entered and shall have continued unstayed and in effect for a period of 90 consecutive days.

“Interest Account” means each account of that name established pursuant to Section 5.5.

“Letter of Representations” means the blanket letter of representations executed by the SFPUC and delivered to DTC and any amendments thereto or successor blanket agreements between the SFPUC and any successor Securities Depository, relating to a system of Book-Entry Bonds to be maintained by the Securities Depository with respect to any bonds, notes or other obligations issued by the SFPUC payable from Revenues of the Power Enterprise.

“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 shall be dissolved or liquidated or shall no longer perform the functions of a securities credit rating agency, then the term “Moody’s” shall 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 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, (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, (e) 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.

“Outstanding” means, as of any date, (a) when used with respect to the Bonds, all Bonds authenticated and delivered under this Trust Indenture, except (i) Bonds theretofore cancelled or delivered to the Trustee for cancellation under Section 2.9, (ii) Bonds in substitution for which other Bonds have been authenticated and delivered pursuant to Article II, (iii) Bonds that are deemed to be no longer outstanding in accordance with Article X 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 this Trust 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 Section 5.7.

“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 Section 5.10.

“Reconstruction and Replacement Fund” means the fund of that name established pursuant to Section 5.9.

“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.

“Refunding Bonds” means all Bonds issued pursuant to Section 3.5.

“Registrar” means the Person responsible for maintaining the Bond Register, which initially shall be the Trustee.

“Reserve Fund” means the fund of that name established pursuant to Section 5.6.

“Reserve Account” means each account of that name established pursuant to Section 5.6, which Account may secure one or more series of Bonds as provided herein 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] 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, (a) with respect to the Common Reserve Series, the least of (i) 10% of the stated Principal amount of the Common Reserve Series, (ii) the maximum Annual Debt Service on the Common Reserve Series, and (iii) 125% of the average Annual Debt Service on the Common Reserve Series, and (b) 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 Section 5.1 of this Trust 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 on or with respect to loans from any Separate System maintained by the SFPUC. 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 market-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) revenues of any Separate System, (n) 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 (o) 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 hereafter 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.

“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 hereinafter provided.

“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 and its successors and assigns, except that if such organization shall be dissolved or liquidated or shall no longer perform the functions of a securities credit rating agency, then the term “Standard & Poor’s” shall 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 hereafter duly adopted by the SFPUC, supplementing, modifying or amending this Trust Indenture in accordance herewith.

“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 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) 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 five (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 five (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-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.

“Trust Indenture” means this Trust Indenture, dated as of March 1, 2015, by and between the SFPUC and the Trustee, as supplemented or amended pursuant hereto, together with any Supplemental Trust Indentures.

“Trustee” means [TRUSTEE], a [national banking association, organized and existing under the laws of the United States of America].

“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.

**Section 1.2. Rules of Interpretation.** For purposes of this Trust Indenture, except as otherwise expressly provided or the context otherwise requires:

(a) The words “herein,” “hereof” and “hereunder” and other similar words refer to this Trust Indenture as a whole and not to any particular Article, Section or other subdivision.

(b) The definitions in this Article are applicable whether the terms defined are used in the singular or the plural.

(c) All accounting terms that are not defined in this Trust Indenture have the meanings assigned to them in accordance with GAAP.

(d) Any pronouns used in this Trust Indenture include both the singular and the plural and cover both genders.

(e) Any terms defined elsewhere in this Trust Indenture have the meanings attributed to them where defined.

(f) The captions or headings herein are for convenience of reference only and in no way define, limit or describe the scope or intent, or control or affect the meaning or construction, of any provisions or Sections hereof.

(g) Any references to Section numbers are to Sections of this Trust Indenture unless stated otherwise.

(h) The term “including” when used in this Trust Indenture means “including without limitation.”

**Section 1.3. Content of Certificates and Opinions.** Every certificate or opinion provided for in this Trust Indenture with respect to compliance with any provision hereof shall include: (a) a statement that the person making or giving such certificate or opinion has read such provision and the definitions herein relating thereto; (b) a brief statement as to the nature and scope of the examination or investigation upon which the certificate or opinion is based; (c) a statement (i) that, in the opinion of such person, such person has made or caused to be made such examination or investigation as is necessary to enable such person to express an informed opinion with respect to the subject matter or (ii) that such person has made or caused to be made such person’s examination or investigation with respect to the subject matter in accordance with specified professional standards; and (d) a statement as to whether, in the opinion of such person, such provision has been complied with. Any such certificate or opinion made or given by an officer or employee of the SFPUC may be based, insofar as it relates to legal or accounting matters, upon a certificate or opinion of or representation by counsel, an accountant or an independent consultant, unless such officer or employee knows, or in the exercise of reasonable

care should have known, that the certificate, opinion or representation with respect to the matters upon which such certificate or statement may be based is erroneous. Any such certificate or opinion made or given by counsel, an accountant or an independent consultant may be based, insofar as it relates to factual matters (with respect to which information is in the possession of the SFPUC) upon a certificate or opinion of or representation by an officer or employee of the SFPUC, unless such counsel, accountant or independent consultant knows, or in the exercise of reasonable care should have known, that the certificate or opinion or representation with respect to the matters upon which such person's certificate or opinion or representation may be based is erroneous. The same officer or employee of the SFPUC, or the same counsel or accountant or independent consultant, as the case may be, need not certify to all of the matters required to be certified under any provision of this Trust Indenture, but different officers, employees, counsel, accountants or independent consultants may certify to different matters, respectively.

## ARTICLE II

### AUTHORIZATION AND GENERAL TERMS AND PROVISIONS OF THE BONDS

**Section 2.1. Authorization of Bonds.** There is hereby created and established an issue of revenue bonds of the SFPUC designated generally as "Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds." Bonds may be issued hereunder from time to time as the issuance thereof is authorized by the SFPUC by a Supplemental Trust Indenture. The maximum principal amount of Bonds that may be issued hereunder is not limited; however, the SFPUC may by a Supplemental Trust Indenture limit the aggregate principal amount of Bonds which may be issued or Outstanding hereunder. Each Series of Bonds shall bear such separate or additional designation as may be necessary or appropriate to distinguish such Series from other Series of Bonds. The Bonds shall be issued in such Series as from time to time shall be authorized by the SFPUC pursuant to a Supplemental Trust Indenture, subject to the covenants, provisions and conditions contained therein and herein.

**Section 2.2. Payment of Bonds.** The Principal, Purchase Price and Redemption Price of and interest on the Bonds shall be payable in lawful money of the United States of America. If any Principal, Purchase Price or Redemption Price of or interest on any Bond is not paid when due, then the overdue Principal, Purchase Price, Redemption Price and interest shall bear interest until paid at the same rate set forth in such Bond.

**Section 2.3. Execution and Authentication of Bonds.** Except as otherwise provided in the Supplemental Trust Indenture authorizing the issuance thereof, each Series of Bonds shall be executed on behalf of the SFPUC with the manual or facsimile signature of the President and the Secretary of the SFPUC. Only such Bonds as shall bear thereon a certificate of authentication, manually executed by the Trustee, shall be entitled to any right or benefit under this Trust Indenture. Such certificate of authentication on any Bond shall be conclusive evidence that the Bond has been duly issued and is secured by the provisions of this Trust Indenture and the Supplemental Trust Indenture pursuant to which such Bond is issued. In case any officer whose signature or a facsimile of whose signature shall appear on any Bond shall cease to be such officer before the delivery of such Bond, such signature or facsimile shall nevertheless be valid and sufficient for all purposes as if such officer had remained in office until such delivery.

**Section 2.4. Form of Bonds.** Each Series of Bonds shall be in such form as shall be set forth in the Supplemental Trust Indenture authorizing the issuance thereof.

**Section 2.5. Registration of Transfer and Exchange of Bonds.** The Trustee shall act as the initial Bond Registrar and in such capacity shall maintain the Bond Register for the registration and transfer of Bonds. Upon surrender of any Bonds at the office of the Trustee, together with an assignment duly executed by the current Owner of such Bonds or such Owner's duly authorized attorney or legal representative in such form as shall be satisfactory to the Trustee, such Bonds may, at the option of the Owner, be exchanged for an equal aggregate principal amount of Bonds of the same Series and maturity, of authorized denominations and bearing interest at the same rate and in the same form as the Bonds surrendered for exchange, registered in the name or names requested by the assignee of the then Owner; provided, that the Trustee is not required to exchange or register the transfer of Bonds after the giving of notice calling such Bond for redemption, in whole or in part. The SFPUC shall execute and the Trustee shall authenticate any Bonds whose execution and authentication is necessary to provide for exchange of Bonds pursuant to this Section and the SFPUC may rely on a representation from the Trustee that such execution is required. Any exchange or registration of transfer of Bonds shall be at the expense of the SFPUC, except that the Trustee may make a charge to any Owner requesting such exchange or registration in the amount of any tax or other governmental charge required to be paid with respect thereto.

**Section 2.6. Persons Treated as Owners.** Prior to due presentment for registration of transfer of any Bond, the Trustee shall treat the Person shown on the Bond Register as owning a Bond as the Owner and the Person exclusively entitled to payment of Principal, Purchase Price or Redemption Price thereof, and interest thereon and, except as otherwise expressly provided herein, the exercise of all other rights and powers of the owner thereof, and neither the SFPUC, the Trustee nor any agent of the SFPUC or the Trustee shall be affected by notice to the contrary.

**Section 2.7. Temporary Bonds.** Prior to the preparation of definitive Bonds the SFPUC may issue temporary Bonds in registered form and in such denominations as the SFPUC may determine but otherwise in substantially the form provided for such definitive Bonds with appropriate variations, omissions and insertions. The SFPUC shall promptly prepare, execute and deliver to the Trustee before the first interest payment date for such Bonds, definitive Bonds and, upon presentation and surrender of Bonds in temporary form, the Trustee shall authenticate and deliver in exchange therefor definitive Bonds with the same maturity and for the same aggregate principal amount. Until exchanged for definitive Bonds, Bonds in temporary form shall be entitled to the lien and benefit of this Trust Indenture and the Supplemental Trust Indenture authorizing the issuance of the Series of Bonds of which such Bond is a part.

**Section 2.8. Mutilated, Lost or Destroyed Bonds.** If any Bond has been mutilated, lost or destroyed, the SFPUC shall execute, and the Trustee shall authenticate and deliver to the Owner, a new Bond of like date and tenor in exchange and substitution for, and upon cancellation of, such mutilated Bond or in lieu of and in substitution for such lost or destroyed Bond but only if the Owner has paid the reasonable expenses and charges of the SFPUC and the Trustee in connection therewith and, in the case of a lost or destroyed Bond, (a) filed with the Trustee evidence satisfactory to the Trustee that such Bond was lost or destroyed and (b) furnished to the Trustee and the SFPUC indemnity satisfactory to each. If any such Bond has

matured or been called for redemption and is payable, instead of issuing a new Bond the Trustee may pay the same without issuing a replacement Bond. If, after the delivery of such replacement Bond, the original Bond in lieu of which such replacement Bond was issued is presented for payment or registration, the Trustee shall seek to recover such replacement Bond from the Person to whom it was delivered or any Person taking therefrom and shall be entitled to recover from the security or indemnity provided therefor to the extent of any loss, damage, cost or expense incurred by the Trustee or the SFPUC in connection therewith.

**Section 2.9. Cancellation and Disposition of Bonds.** The SFPUC may deliver Bonds to the Trustee for cancellation at any time and for any reason and the Trustee is hereby authorized to cancel such Bonds. All Bonds that have been paid or delivered to the Trustee for cancellation shall not be reissued. Unless otherwise directed by the SFPUC, the Trustee shall treat such Bonds in accordance with its document retention policies or as may be directed by State law.

**Section 2.10. Securities Depository Provisions.**

(a) Except as otherwise provided in the Supplemental Trust Indenture authorizing the issuance thereof, each Series of Bonds shall be Book-Entry Bonds initially registered in the name of Cede & Co., as nominee of DTC.

(b) All payments of Principal, Purchase Price and Redemption Price of and interest on the Book-Entry Bonds and all notices with respect thereto, including notices of full or partial redemption, shall be made and given at the times and in the manner set forth in the Letter of Representations. The terms and provisions of the Letter of Representations shall govern in the event of any inconsistency between the provisions of this Trust Indenture and the Letter of Representations. The Letter of Representations may be amended without Owner consent.

(c) The book-entry registration system for a Series of Book-Entry Bonds may be terminated and certificates delivered to and registered in the name of the Beneficial Owners, under either of the following circumstances: (i) the Securities Depository notifies the SFPUC and the Trustee that it is no longer willing or able to act as Securities Depository for such Series of Book-Entry Bonds and a successor Securities Depository for such Series of Book-Entry Bonds is not appointed by the SFPUC prior to the effective date of such discontinuation; or (ii) the SFPUC determines that continuation of the book-entry system through the Securities Depository is not in the best interest of the SFPUC or the Beneficial Owners of such Series of Bonds.

(d) In the event a successor Securities Depository is appointed by the SFPUC, such Series of Book-Entry Bonds will be registered in the name of such successor Securities Depository or its nominee. In the event certificates are required to be issued to Beneficial Owners, the Trustee and the SFPUC shall be fully protected in relying upon a certificate of the Securities Depository or any participant of the Securities Depository as to the identity of and the principal amount of Book-Entry Bonds held by such Beneficial Owners.

(e) The Beneficial Owners will not receive physical delivery of certificates except as provided herein. All Book-Entry Bonds shall be registered in the name of the Securities Depository or its nominee, all transfers of beneficial ownership interests in Book-Entry Bonds

will be made in accordance with the rules of the Securities Depository, and no Person purchasing, selling or otherwise transferring beneficial ownership interests in Book-Entry Bonds will receive, hold or deliver any certificate representing such beneficial ownership interests. The SFPUC and the Trustee shall have no responsibility or liability for transfers of beneficial ownership interests in Book-Entry Bonds.

(f) The SFPUC and the Trustee will recognize the Securities Depository or its nominee as the Owner of Book-Entry Bonds for all purposes, including receipt of payments, notices and voting; provided, that the Trustee may recognize votes by or on behalf of Beneficial Owners as if such votes were made by Owners of a related portion of the Bonds when such votes are received in compliance with an omnibus proxy of the Securities Depository or otherwise pursuant to the rules of the Securities Depository or the provisions of the Letter of Representations or other comparable evidence delivered to the Trustee.

(g) The SFPUC and the Trustee shall be entitled to treat the Person in whose name a Book-Entry Bond is registered as the absolute owner of such Book-Entry Bond for all purposes of this Trust Indenture, and neither the SFPUC nor the Trustee shall have any responsibility or obligation to any Beneficial Owner of such Book-Entry Bond. Without limiting the immediately preceding sentence, neither the SFPUC nor the Trustee shall have any responsibility or obligation with respect to (i) the accuracy of the records of any Securities Depository or any other Person with respect to any ownership interest in Book-Entry Bonds, (ii) the delivery to any Person, other than an Owner, of any notice with respect to Book-Entry Bonds, including any notice of redemption or refunding, (iii) the selection of the particular Bonds or portions thereof to be redeemed or refunded in the event of a partial redemption or refunding of part of the Bonds Outstanding or (iv) the payment to any Person, other than an Owner, of any amount with respect to the Principal, Purchase Price or Redemption Price of or interest on Book-Entry Bonds.

**Section 2.11. Disposition of Unclaimed Funds.** Notwithstanding any provisions of this Trust 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 two (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 shall cease, and the Owners of such Bonds shall thereafter look solely to the SFPUC for payment of any amounts then due.

### **ARTICLE III ISSUANCE OF BONDS**

#### **Section 3.1. Series of Bonds; Terms of Supplemental Trust Indentures.**

(a) 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 this Trust Indenture and any additional requirements set forth in such Supplemental Trust Indenture.

(b) A Supplemental Trust Indenture authorizing a Series of Bonds shall specify (or provide the method for specifying) for such Series of Bonds, among other things: (i) the authorized principal amount and distinguishing designation; (ii) the general purpose or purposes for which such Series of Bonds are being issued, and the deposit, disbursement and application of the sale proceeds; (iii) the dated date or dates and the maturity date or dates, the principal amount maturing on each maturity date, any Mandatory Sinking Fund Payments and the interest payment date or dates; (iv) which of such Series of Bonds are Capital Appreciation Bonds, Current Interest Bonds and Term Bonds; (v) the interest rate or rates (which may be a rate of zero); (vi) the authorized denominations of and the manner of dating and numbering such Series of Bonds; (vii) the method and place or places of payment of the Principal, Purchase Price and Redemption Price of and interest on, such Series of Bonds; (viii) any permitted or required variations, legends, omissions and insertions in the form or forms of such Series of Bonds; (ix) the terms and conditions, if any, for the redemption of such Series of Bonds prior to maturity, including the date or dates fixed for redemption, the Redemption Price or Prices, whether such redemption is subject to rescission and other applicable redemption terms; (x) the terms and conditions, if any, for the optional or mandatory tender for purchase of such Series of Bonds prior to maturity, including the purchase date or dates, the Purchase Price or Prices and other applicable terms; (xi) whether such Series is a Common Reserve Series and, if not, the Reserve Requirement for such Series; (xii) the authorization of and any terms and conditions with respect to any Reserve Account Credit Facility or Facilities for such Series of Bonds; (xiii) the pledge or provision of money, assets or security other than Revenues to or for the payment of such Series of Bonds or any portion thereof; (xiv) the creation and maintenance of one or more special funds or accounts, if any, to provide for the payment or purchase of such Series of Bonds and the application of money therein; (xv) the tender agents, remarketing agents, auction agents and broker-dealers, if any, and the duties and obligations thereof; and (xvi) any other provisions which the SFPUC deems necessary or desirable in connection with such Series of Bonds and not inconsistent with the terms of this Trust Indenture.

**Section 3.2. Limitations on Issuance of Bonds.** The SFPUC will not hereafter create any special fund or funds for payment of revenue bonds, notes or other obligations for borrowed money or issue or incur any such obligations or create any additional indebtedness that will rank on a parity with or in priority over the pledge of and charge and lien on the Revenues or of the payments into the Bond Funds and Reserve Fund established hereunder for the payment of the Bonds; provided, that Bonds may be issued and Swap Agreements may be entered into payable from the Revenues on a parity with the Bonds hereby authorized, and secured by an equal pledge of and charge and lien on such Revenues in accordance with the provisions of this Trust Indenture for any lawful purpose of the SFPUC.

**Section 3.3. 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 this Trust Indenture, including the Supplemental Trust Indenture authorizing the issuance of the Bonds of such Series, certified by the Secretary of the SFPUC;

(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 Trust 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 Trust 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 this Trust 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 this Trust Indenture;

(e) Evidence acceptable to the Trustee (which may be a Certificate of the SFPUC so stating) 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 in Section 3.4.

#### **Section 3.4. Additional Bonds Certification.**

(a) In connection with the issuance of a Series of Bonds, the requirements of subsection (f) of Section 3.3 or of paragraph (ii) of subsection (b) of Section 3.5 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 (12) consecutive months of the prior twenty-four (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 this paragraph (a)(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 (12) 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.

### **Section 3.5. 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 subsections (a), (b), (c) and (e) of Section 3.3;

(ii) Either (A) the document specified in Section 3.4, 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 this Trust 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.

**Section 3.6. Subordinate Obligations.** Nothing in this Trust Indenture shall prohibit the issuance by the SFPUC of Subordinate Obligations.

**Section 3.7. Application of Proceeds.** Proceeds of each Series of Bonds shall be applied as provided in the Supplemental Trust Indenture pursuant to which such Series of Bonds is authorized. All Bonds paid, purchased, redeemed or retired from proceeds of the sale of Refunding Bonds, and all Bonds surrendered to the Trustee against the issuance of Refunding Bonds, shall be forthwith cancelled and, unless otherwise provided in the Supplemental Trust Indenture authorizing the issuance thereof, shall not be reissued.

**ARTICLE IV  
REDEMPTION OF BONDS**

**Section 4.1. Terms of Redemption.** No Bond may be called for redemption by the SFPUC except as provided in the Supplemental Trust Indenture authorizing the issuance of the Series of Bonds of which such Bond is a part.

**Section 4.2. Selection of Bonds for Redemption.** Except as otherwise provided in the Supplemental Trust Indenture authorizing the issuance thereof, if less than all of a Series of Bonds are called for redemption, they shall be redeemed from maturities in such order as determined by the SFPUC, and by lot within any maturity subject to selection by the Trustee as provided below; provided, that if an Event of Default has occurred and is continuing any Bonds called for redemption shall be redeemed in proportion by maturity and within maturities by lot. The portion of any Bond to be redeemed shall be an authorized denomination and in selecting Bonds for redemption, each Bond shall be considered as representing that number of Bonds which is obtained by dividing the principal amount of such Bond by the minimum authorized denomination thereof. If a portion of a Bond shall be called for redemption, a new Bond in principal amount equal to the unredeemed portion thereof shall be issued to the Owner upon the surrender thereof. If for any reason the principal amount of Bonds called for redemption would result in a redemption of Bonds less than the authorized denomination, the Trustee, to the extent possible within the principal amount of Bonds to be redeemed, is hereby authorized to adjust the selection of Bonds for such purpose in order to minimize any such redemption. Notwithstanding the foregoing, the Securities Depository for Book-Entry Bonds shall select the Bonds for redemption within particular maturities according to its stated procedures.

**Section 4.3. Notice of Redemption.**

(a) Notice of the redemption of Bonds (or portions thereof) shall be given as set forth in this Section unless otherwise provided in the Supplemental Trust Indenture authorizing the issuance thereof.

(b) When Bonds (or portions thereof) are to be redeemed, the SFPUC shall give or cause to be given notice of the redemption of such Bonds to the Trustee no later than 45 days prior to the redemption date or such shorter time as may be acceptable to the Trustee. In the case of an optional redemption, the notice 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 shall be of no effect if such money is not so deposited or if the notice is rescinded as described in subsection (e) of this Section. The Trustee, at the expense of the SFPUC, shall send notice of any redemption, identifying the Bonds to be redeemed, the redemption date and the method and place of payment and the information required by subsection (c) of this Section, by first class mail to each Owner of a Bond called for redemption to the Owner's address set forth on the Bond Register. Unless otherwise provided in the Supplemental Trust Indenture authorizing the issuance of the Series of Bonds of which such Bond is a part, such notice shall be sent by the Trustee by first class mail between 30 and 60 days prior to the scheduled redemption date. With respect to Book-Entry Bonds, if the Trustee sends

notice of redemption to the Securities Depository pursuant to the Letter of Representations, the Trustee shall not be required to give the notice set forth in the immediately preceding sentence. If notice is given as stated in this subsection, failure of any Owner to receive such notice, or any defect in the notice, shall not affect the redemption or the validity of the proceedings for the redemption of the Bonds.

(c) In addition to the foregoing, the redemption notice shall contain with respect to each Bond being redeemed, (i) the CUSIP number, (ii) the date of issue, (iii) the interest rate, (iv) the maturity date and (v) any other descriptive information determined by the Trustee to be needed to identify the Bonds. If a redemption is a Conditional Redemption, the notice shall so state. The Trustee shall also send each notice of redemption at least 30 days (or such shorter period as may be otherwise provided in the Supplemental Trust Indenture authorizing the issuance of the Series of Bonds of which such Bond is a part) before the redemption date to (A) any securities credit rating agency then rating the Bonds to be redeemed; (B) all of the registered clearing agencies known to the Trustee to be in the business of holding substantial amounts of bonds of a type similar to the Bonds; (C) one or more national information services that disseminate notices of redemption of bonds such as the Bonds, such services to be identified by the Trustee; and (D) the Beneficial Owners set forth on the Beneficial Owner Register.

(d) On or before the date fixed for redemption, subject to the provisions of subsections (b) and (e) of this Section, money shall be deposited with the Trustee to pay the Redemption Price of and accrued interest to the redemption date on the Bonds called for redemption. Upon the deposit of such money, unless the SFPUC has given notice of rescission as described in subsection (e) of this Section, the Bonds shall cease to bear interest on the redemption date, shall no longer be entitled to the benefits of this Trust Indenture (other than for payment and transfer and exchange) and shall no longer be considered Outstanding.

(e) Any Conditional Redemption may be rescinded in whole or in part at any time prior to the redemption date if the SFPUC delivers a Certificate of the SFPUC to the Trustee instructing the Trustee to rescind the redemption notice. The Trustee shall give prompt notice of such rescission to the affected Owners. Any Bonds subject to Conditional Redemption where redemption has been rescinded shall remain Outstanding, and the rescission shall not constitute an Event of Default. Further, in the case of a Conditional Redemption, the failure of the SFPUC to make funds available in part or in whole on or before the redemption date shall not constitute an Event of Default, and the Trustee shall give prompt notice to the Securities Depository or the affected Owners that the redemption did not occur and that the Bonds called for redemption and not so paid remain Outstanding.

**Section 4.4. Purchase at Any Time.** Nothing in this Trust Indenture shall prevent the SFPUC from purchasing Bonds or from delivering any such Bonds to the Trustee for cancellation pursuant to Section 2.9. Term Bonds purchased pursuant to this Section may be credited against future Mandatory Sinking Fund Payments pursuant to the provisions of the Supplemental Trust Indenture authorizing the issuance of such Term Bonds. The principal amount of Bonds to be redeemed by optional redemption under this Trust Indenture may be reduced by the principal amount of Bonds purchased by the SFPUC and delivered to the Trustee for cancellation at least 45 days prior to the redemption date.

**ARTICLE V**  
**REVENUE FUND; PLEDGE OF REVENUES;**  
**CREATION OF FUNDS AND PAYMENTS THEREFROM; INVESTMENTS**

**Section 5.1. Revenue Fund.** The Revenue Fund of the Power Enterprise previously established by the SFPUC and held by the Treasurer is hereby continued for so long as any Bonds are Outstanding. Upon and after the issuance of any Bonds pursuant to this Trust 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 this Trust Indenture, solely for the purpose 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 and all other charges or obligations against the Revenues of whatever nature now or hereafter imposed thereon by law or contract.

**Section 5.2. Pledge of Revenues.**

(a) The Bonds are special limited obligations of the SFPUC payable from and secured by the Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The Bonds shall not in any manner or to any extent constitute general obligations of the SFPUC or the City, or of the State or any political subdivision of the State. The Bonds are not a charge upon the general fund or upon any moneys or other property of the SFPUC or the City, or of the State or any political subdivision of the State, other than the Revenues. Neither the full faith and credit nor the taxing power of the City, or of the State or any political subdivision of the State, are pledged to the payment of the Bonds. The Bonds shall not constitute indebtedness of the City within the meaning of any State constitutional or statutory provisions or limitations or under the Charter.

(b) The SFPUC hereby 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 this Trust Indenture permitting the application of such Revenues for the purposes and on the terms and conditions set forth therein and herein, and the Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits, shall constitute a trust for the security and payment of the Bonds and Swap Agreement Payments and other payments due under Swap Agreements. The pledge of and lien and charge on the Revenues herein made 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 and this Trust Indenture have been made. The pledge of and lien and charge on the Revenues and other money and obligations shall be valid and binding from the time made, and the Revenues so pledged and thereafter received by the SFPUC shall immediately be subject to the pledge, lien and charge hereof without any physical delivery or further act, and such pledge, lien and charge shall be

valid and binding as against any parties having claims of any kind in tort, contract, or otherwise against the SFPUC irrespective of whether such parties have notice thereof.

**Section 5.3. Equality of Security.** The covenants and agreements set forth in this Trust 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 herein. Notwithstanding the foregoing, nothing herein shall prevent additional security being provided for a particular Series of Bonds under any Supplemental Trust Indenture.

**Section 5.4. Flow of Funds.** Revenues deposited in the Revenue Fund shall be disbursed in the following order of priority:

- (a) *First*, for the payment of Operation and Maintenance Expenses;
- (b) *Second*, for any Priority R&R Fund Deposits into the Reconstruction and Replacement Fund;
- (c) *Third*, for deposit in the Interest Account of each Bond Fund under Section 5.5;
- (d) *Fourth*, for deposit in the Bond Retirement Account of each Bond Fund under Section 5.5;
- (e) *Fifth*, for deposit in the Reserve Fund under Section 5.6;
- (f) *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 (f) which may be hereafter established by the SFPUC by resolution;
- (g) *Seventh*, for any Additional R&R Fund Deposits into the Reconstruction and Replacement Fund;
- (h) *Eighth*, for any necessary or desirable capital additions or improvements to the Power Enterprise;
- (i) *Ninth*, for any payment under a Take-or-Pay Power Purchase Agreement that does not constitute an Operation and Maintenance Expense;
- (j) *Tenth*, for any payment under a Swap Agreement that does not constitute a Swap Agreement Payment; and

(k) *Eleventh*, for any other lawful purpose of the SFPUC.

**Section 5.5. Bond Funds.**

(a) There is hereby created 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 shall be held and administered by the Trustee appointed as provided for in Section 9.1, and shall be used solely for the purpose of paying the Bonds and the Swap Agreement Payments of the related Series in the manner herein provided. 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 this Trust 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 shall be a charge and lien upon the Revenue Fund and payable therefrom as set forth in this Section.

(b) There is hereby created an Interest Account in each Bond Fund. Promptly upon receipt thereof the Trustee shall 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 related to such Series of Bonds. The SFPUC shall 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 shall be necessary to pay the interest on and any Swap Agreement Payments with respect to such Series of Bonds as the same shall become due. The money in such Interest Account shall 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 hereby created 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 shall 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 shall 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 shall 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, shall be sufficient to pay the interest on such Series of Bonds coming due on such date.

(d) There is hereby created a Bond Retirement Account in each Bond Fund. The SFPUC shall 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 shall be necessary to pay the Mandatory Sinking Fund Payments and Principal of such Series of Bonds as the same shall become due. The money in such Bond Retirement Account shall 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 shall 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 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. Each Series of Bonds and the interest thereon shall 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 shall 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 shall be insufficient money in the Revenue Fund to make the payments required to be made into the respective Bond Funds, the SFPUC shall 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 shall 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) shall 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.

#### **Section 5.6. Reserve Fund.**

(a) There is hereby created 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 appointed as provided for in Section 9.1, 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 herein. 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 and required deposits into the Bond Funds, in trust for the account of the respective Reserve Accounts, certain fixed amounts, without regard to any fixed proportion of the Revenues, after payment of Operation and Maintenance Expenses and required deposits into the Bond Funds, sufficient to make the balance in the Reserve Fund equal the aggregate Reserve Requirements of the Bonds secured by the Reserve Accounts. Such fixed amounts to be paid to the Trustee and deposited into the Reserve Fund shall be a charge and lien upon the Revenue Fund and payable therefrom as set forth in this Section.

(b) The SFPUC hereby establishes the Common Reserve Account and may establish 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 hereto and to the Supplemental Trust Indenture or Indentures authorizing the issuance thereof. Promptly upon receipt 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 Reserve Account Credit Facility or Facilities, or any combination of the foregoing, in such amount as shall 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, 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.

**Section 5.7. Project Funds.** There is hereby created 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 shall 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 shall 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 shall be designated pursuant to the Supplemental Trust Indenture authorizing the issuance thereof. Money so deposited in the Project Fund shall 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.

**Section 5.8. Payments from the Project Funds.** Each payment by the SFPUC from the Project Fund shall 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.

**Section 5.9. Reconstruction and Replacement Fund.** There is hereby created 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.

**Section 5.10. Rebate Funds.**

(a) Unless otherwise provided pursuant to a Supplemental Trust Indenture, there is hereby established 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 this Section. The SFPUC shall 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 shall determine or cause to be determined the Rebate Amount attributable to each Rebate Fund for such Computation Period. Subject to the provisions of this Trust Indenture, the SFPUC shall 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. The Trustee shall not be responsible for calculating Rebate Amounts or for the adequacy or correctness of any rebate report.

(b) The SFPUC shall make the following payments from the money and Authorized Investments in each Rebate Fund to the United States and shall file with the Internal Revenue Service such forms and/or reports as required for such purpose: (i) not later than the 60th day after the end of each fifth Bond Year for the related Series of Tax-Exempt Bonds, an amount equal to 90% of the Rebate Amount for the Computation Period ending immediately prior to the date of payment, and (ii) not earlier than the date of retirement of such Series of Tax-Exempt Bonds, nor later than the 60th day thereafter, the amount, if any, which, when added to amounts previously paid to the United States as Rebate Amounts for such Series of Tax-Exempt Bonds, will equal 100% of the Rebate Amount with respect to such Series of Tax-Exempt Bonds.

**ARTICLE VI  
INVESTMENT OR DEPOSIT OF FUNDS**

**Section 6.1. Deposits and Security Therefor.** All money received by the Trustee under this Trust Indenture for deposit in the Funds shall be considered trust funds pending their application as provided in this Trust Indenture and shall 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 herein provided. All money on deposit with the Trustee shall be secured in the manner required by State or other applicable law. All security for deposits shall 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.

## **Section 6.2. Investment or Deposit of Funds.**

(a) All money on deposit in the Funds shall 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 hereof.

(b) All purchases or sales of Authorized Investments made by the Trustee shall be made at the direction of the SFPUC (given in writing or orally, confirmed in writing). In the absence of such direction, the Trustee shall invest all money on deposit in the Funds held by the Trustee in 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 shall be in accordance with the provisions of this Trust Indenture, and whenever any other transfer or payment is required to be made from any particular Fund, such transfer or payment shall 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 shall 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, shall be applied in accordance with the applicable provisions governing such Fund hereunder.

**Section 6.3. Valuation of Funds.** The Trustee shall 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 shall 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 shall be valued at the fair market value thereof; provided, that investments in any Reserve Account shall be valued at cost plus accreted value.

## **ARTICLE VII COVENANTS OF THE COMMISSION**

The SFPUC hereby covenants and agrees with the Owners from time to time of the Bonds issued pursuant to this Trust Indenture and any Supplemental Trust Indenture as follows:

**Section 7.1. Maintenance of Existence and Powers.** The SFPUC shall at all times maintain its existence as a separate department of the City and the existence of the Power Enterprise as a separate utility of the SFPUC formed under the authority of the Charter, and shall

at all times use its best efforts to maintain all the powers of the SFPUC and of the Power Enterprise as a separate utility of the SFPUC. The SFPUC shall undertake any City-wide retail electric power program as a Separate System.

### **Section 7.2. Operation and Maintenance of the Power Enterprise.**

(a) Subject to the other provisions of this Trust Indenture, the SFPUC shall 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. Without limiting the generality of the foregoing, the SFPUC will at all times operate and maintain the Hetch Hetchy Project for so long as any Bonds remain Outstanding.

(b) The SFPUC shall at all times comply with the terms and conditions of any statutes, permits and licenses for the Power Enterprise, and any properties or facilities constituting a part thereof, including the Hetch Hetchy Project, enacted or issued by any federal or state governmental agency or body having jurisdiction thereof and with the power to adopt laws and issue orders with respect thereto and enforce the same, and with any federal or state law or regulation applicable to the construction, operation, maintenance and repair of the Power Enterprise; provided, that the SFPUC shall not be required to comply with any such terms, conditions or provisions which the SFPUC is contesting in good faith. The SFPUC shall use its best efforts to obtain renewals of such permits or licenses or obtain new permits or licenses unless such renewals or new permits or licenses are not, in the judgment of the SFPUC, in the best interests of the SFPUC and the Owners.

(c) The SFPUC shall allocate costs of those portions of the Hetch Hetchy Project used jointly by the Power Enterprise and the Water Enterprise, including operating and capital costs, between the Power Enterprise and the Water Enterprise on a consistent basis in such manner as the SFPUC shall reasonably determine.

### **Section 7.3. 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 of this Section 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 this Trust 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.

**Section 7.4. Rates and Charges.** (a) The SFPUC shall 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 subsection (a) of Section 7.3 (without giving effect to subsection (b) of Section 7.3).

(b) Anything herein 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.

**Section 7.5. Protection of Security.** The SFPUC is duly authorized under all applicable laws to issue the Bonds and to adopt this Trust Indenture and to pledge the Revenues purported to be pledged by this Trust Indenture in the manner and to the extent provided in this Trust Indenture. The Revenues so pledged 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 this Trust Indenture, except as otherwise expressly provided herein. The Bonds and this Trust Indenture are and will be valid and binding obligations of the SFPUC enforceable in accordance with their terms and the terms of this Trust Indenture; provided, that the rights of the Owners under this Trust 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 shall 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 this Trust Indenture against all claims and demands of all persons whatsoever.

**Section 7.6. Take-or-Pay Power Sales Contracts.** So long as any Take-or-Pay Power Sales Contract is in effect, the SFPUC shall enforce the provisions of such Take-or-Pay Power Sales Contract and shall 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.

**Section 7.7. Take-or-Pay Power Purchase Agreements.** The SFPUC shall not hereafter enter 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 Section 3.4 for the first three (3) full Fiscal Years following the Fiscal Year in which such Take-or-Pay Power Purchase Agreement will become effective.

**Section 7.8. Not to Dispose of Power Enterprise Properties.** The SFPUC shall 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 Section 7.4 for a period of three (3) 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 shall 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.

**Section 7.9. Insurance.**

(a) The SFPUC shall 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 shall 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 shall 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 shall determine in its discretion.

(c) The SFPUC may provide any insurance coverage otherwise required by subsection (a) through a self-insurance program.

**Section 7.10. 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 shall 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.

**Section 7.11. Financial Reports.** The SFPUC shall prepare and make available for inspection at the principal administrative office of the SFPUC and shall provide to the Trustee the most recent audited annual financial statements of the Power Enterprise within 270 days after the end of each Fiscal Year.

**Section 7.12. Economically Sound Improvements.** The SFPUC shall undertake any additions, betterments or improvements to the Power Enterprise in a sound and economical manner and in accordance with applicable law.

**Section 7.13. Payment of Bonds.** The SFPUC shall 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 herein and in the Bonds, and shall faithfully do and perform and fully observe and keep any and all covenants, undertakings, stipulations and provisions contained in the Bonds and in this Trust Indenture and the Supplemental Trust Indentures.

**Section 7.14. Payment of Taxes and Claims.** The SFPUC shall 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 shall 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 shall not be required to pay any such taxes, assessments, charges or claims which the SFPUC shall in good faith contest by proper legal proceedings.

**Section 7.15. Further Assurances.** The SFPUC shall 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 herein.

## ARTICLE VIII DEFAULTS AND REMEDIES

**Section 8.1. Events of Default.** Each of the following is an “Event of Default” hereunder:

(a) The SFPUC shall 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 Section 8.7, default in the performance, or breach, of any covenant, warranty or representation of the SFPUC contained in this Trust Indenture (other than a default under subsection (a) of this Section); 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.

### **Section 8.2. Remedies Upon Default.**

(a) If an Event of Default under Section 8.1 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 shall, subject to the requirements of Section 9.2(e), 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 of Section 9.2(e), 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 hereunder, 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 shall affect any subsequent default or impair any consequent right.

### **Section 8.3. 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 of Section 9.2(e), shall proceed to protect and enforce its rights and the rights of the Owners of the Bonds under this Trust Indenture by a suit or suits in equity or at law, either for the specific performance of any covenant or agreement contained in this Trust Indenture or in aid of the execution of any power herein or 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 this Trust Indenture.

(b) Without limiting the generality of the foregoing, the Trustee shall 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 this Trust Indenture by any acts that may be unlawful or in violation of this Trust Indenture, and (ii) to protect its interests and the interests of the Owners in the money and other property then held under this Trust 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 this Trust Indenture or be prejudicial to the interests of the Owners or the Trustee.

**Section 8.4. Marshaling of Assets.** Upon the occurrence of an Event of Default, all money in all Funds shall be available to be utilized by the Trustee in accordance with this Article. The rights of the Trustee under Section 9.5 shall be applicable. During the continuance of any such Event of Default, all provisions of this Trust Indenture relating to the utilization of the Funds shall be superseded by this Article. Subsequent to the curing or waiver of any such Event of Default, the provisions of this Trust Indenture relating to utilization of the Funds shall be reinstated.

### **Section 8.5. 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 shall then be due

and payable by acceleration or otherwise, and whether or not the Trustee shall have made any demand upon the SFPUC for the payment of overdue Principal, Purchase Price, Redemption Price and interest) shall 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 this Trust 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 shall 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 Section 9.5.

(b) No provision of this Trust 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 subsection (a) of this Section.

**Section 8.6. Possession of Bonds Not Required.** All rights under this Trust 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 shall, subject to Section 8.8, be for the ratable benefit of the Owners.

**Section 8.7. Notice and Opportunity to Cure Certain Defaults.** No default under Section 8.1(b) shall constitute an Event of Default until written notice of such default shall 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 shall have had 60 days after receipt of such notice to correct such default or cause such default to be corrected, and shall 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 shall 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.

**Section 8.8. 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 this Trust Indenture shall 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 this Article or otherwise, shall, subject to subsections (b) and (c) of this Section, be applied by the Trustee as follows:

- (i) *First*, to the payment of all amounts due the Trustee under Section 9.5;
- (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 shall 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 shall 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 this Trust Indenture), with interest upon the Principal amount of the Bonds from the respective dates upon which they shall have become due and payable, and, if the amount available shall 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 clause (i) of subsection (a) of this Section regarding payment to the Trustee, all such money shall 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 of this Section, 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 shall 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 shall apply such funds, it shall fix a date (which shall be an interest payment date unless it shall 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, shall cease to accrue. The Trustee shall also select a record date for such payment date. The Trustee shall 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 shall not be required to make payment to the Owner of any Bond until such Bond shall be presented to the Trustee for appropriate endorsement or for cancellation if fully paid.

**Section 8.9. Owners May Direct Proceedings.** The Owners of a majority in aggregate Principal amount of the Outstanding Bonds shall, subject to the requirements of Section 9.2(e), 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 hereunder, provided that such direction shall not be in conflict with any rule of law or this Trust Indenture and that the Trustee shall 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 shall 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 under this Section.

**Section 8.10. Limitations on Rights of Owners.**

(a) No Owner shall have any right to pursue any other remedy under this Trust Indenture or the Bonds unless: (i) an Event of Default shall 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 hereinabove granted 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 of subsection (a) of this Section are conditions precedent to the exercise by any Owner of any remedy hereunder. The exercise of such rights is further subject to the provisions of Sections 8.9, 8.11 and 8.14. No one or more Owners shall have any right in any manner whatever to enforce any right under this Trust Indenture, except in the manner herein provided. All proceedings at law or in equity with respect to an Event of Default shall be instituted and maintained in the manner herein provided for the equal and ratable benefit of the Owners of all Bonds Outstanding.

**Section 8.11. Unconditional Right of Owners To Receive Payment.** Notwithstanding any other provision of this Trust Indenture, the Owner of each Bond shall 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.

**Section 8.12. Restoration of Rights and Remedies.** If the Trustee or any Owner has instituted any proceeding to enforce any right or remedy under this Trust 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 shall, subject to any determination in such proceeding, be restored to their former positions hereunder, and all rights and remedies of the Trustee and the Owners shall continue as though no such proceeding had been instituted.

**Section 8.13. Rights and Remedies Cumulative.** No right or remedy herein conferred upon or reserved to the Trustee is intended to be exclusive of any other right or remedy, but each such right or remedy shall, to the extent permitted by law, be cumulative of and in addition to every other right or remedy given hereunder or now or hereafter existing at law, in equity or otherwise. The assertion or employment of any right or remedy hereunder shall not prevent the concurrent assertion or employment of any other appropriate right or remedy.

**Section 8.14. 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 shall impair any such right or remedy or constitute a waiver of such Event of Default. Every right and remedy given by this Article or by law to the Trustee or the Owners may be exercised from time to time, and as often as may be deemed expedient, by the Trustee or the Owners, as the case may be.

**Section 8.15. 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 Section 9.2(e), waive any existing default or Event of Default and its consequences, except an Event of Default under Section 8.1(a). Upon any such waiver, the default or Event of Default shall be deemed cured and shall cease to exist for all purposes. No waiver of any default or Event of Default shall extend to or effect any subsequent default or Event of Default or shall impair any right or remedy consequent thereto.

(b) Notwithstanding any provision of this Trust Indenture, in no event shall any Person, other than all of the affected Owners, have the ability to waive any Event of Default

under this Trust 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.

**Section 8.16. Notice of Events of Default.** If an Event of Default occurs of which the Trustee has or is deemed to have notice under Section 9.2(h), the Trustee shall give prompt notice thereof to the SFPUC. Within 30 days thereafter (unless such Event of Default has been cured or waived), the Trustee shall 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 Section 8.1(a), 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 Section 8.1(b) shall be subject to the provisions of Section 8.7 and shall not be given until the grace period has expired.

## ARTICLE IX THE TRUSTEE

### Section 9.1. Appointment; Duties and Responsibilities of the Trustee.

(a) The SFPUC hereby designates and appoints [\_\_\_\_\_] as the initial Trustee with respect to the Bonds.

(b) Prior to the occurrence of an Event of Default of which it has or is deemed to have notice hereunder, 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 this Trust Indenture, and no implied covenants or obligations shall be read into this Trust 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 this Trust Indenture; but the Trustee is under a duty to examine such certificates and opinions to determine whether they conform to the requirements of this Trust Indenture.

(c) In case an Event of Default of which the Trustee has or is deemed to have notice hereunder has occurred and is continuing, the Trustee shall exercise such of the rights and powers vested in it by this Trust 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.

(d) No provision of this Trust Indenture shall 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 subsection shall not be construed to limit the effect of subsection (b) of this Section; (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 this Trust 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 this Trust Indenture; and (iv) no provision of this Trust Indenture shall require the Trustee to expend or risk its own funds or otherwise incur any liability in the performance of any of its duties hereunder, 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.

(e) The Trustee shall maintain records of all investments and disbursements of proceeds in the Funds through the date ending six (6) years following the date on which all the Bonds have been retired.

(f) Whether or not expressly so provided, every provision of this Trust Indenture relating to the conduct or affecting the liability of or affording protection to the Trustee is subject to the provisions of this Section.

**Section 9.2. Certain Rights of the Trustee.** Except as otherwise provided in Section 9.1:

(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 this Trust Indenture shall 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 this Trust Indenture shall 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 this Trust Indenture the Trustee deems it desirable that a matter be proved or established prior to taking, suffering or omitting any action hereunder, 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 shall 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 this Trust 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 shall 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 this Trust Indenture either directly or by or through agents or attorneys, and may in all cases pay, subject to reimbursement as provided in Section 9.5, such reasonable compensation as it deems proper to all such agents and attorneys reasonably employed or retained by it, and the Trustee shall 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 hereunder, except an Event of Default under Section 8.1(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 this Trust 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 this Trust Indenture, the Trustee, in its sole discretion, may determine what action, if any, shall 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 this Trust Indenture shall 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, shall survive the Trustee's resignation or removal, the defeasance or discharge of this Trust Indenture and final payment of the Bonds;

(l) The permissive right of the Trustee to take the actions permitted by this Trust Indenture shall not be construed as an obligation or duty to do so; and

(m) Except for information provided by the Trustee concerning the Trustee, the Trustee shall have no responsibility for any information in any offering memorandum or other disclosure material distributed with respect to the Bonds, and the Trustee shall have no responsibility for compliance with any state or federal securities laws in connection with the Bonds.

**Section 9.3. Trustee Not Responsible for Recitals.** The recitals contained in this Trust Indenture and in the Bonds (other than the certificate of authentication on the Bonds) are



statements of the SFPUC, and the Trustee assumes no responsibility for their correctness. The Trustee makes no representations as to the value, condition or sufficiency of any assets pledged or assigned as security for the Bonds, the right, title or interest of the SFPUC therein, the security provided thereby or by this Trust Indenture or the tax status of interest on the Bonds. The Trustee is not accountable for the use or application by the SFPUC of any of the Bonds or the proceeds of the Bonds, or for the use or application of any money paid over by the Trustee in accordance with any provision of this Trust Indenture.

**Section 9.4. Trustee May Own Bonds.** The Trustee, in its commercial banking or in any other capacity, may in good faith buy, sell, own, hold and deal in any of the Bonds and may join in any action which any Owner may be entitled to take with like effect as if it were not Trustee. The Trustee, in its commercial banking or in any other capacity, may also engage in or be interested in any financial or other transaction with the SFPUC and may act as depository, trustee or agent for any committee of Owners secured hereby or other obligations of the SFPUC as freely as if it were not Trustee. The provisions of this Section shall extend to affiliates of the Trustee.

**Section 9.5. Compensation and Expenses of the Trustee.**

(a) The SFPUC hereby covenants and agrees:

(i) to pay to the Trustee compensation for all services rendered by it hereunder and under the other agreements relating to the Bonds to which the Trustee is a party in accordance with terms agreed to from time to time, and, subsequent to default, in accordance with the Trustee's then-current fee schedule for default administration (the entirety of which compensation shall not be limited by any provision of law regarding compensation of a trustee of an express trust);

(ii) to reimburse the Trustee upon its request for all reasonable expenses, disbursements and advances incurred or made by the Trustee in accordance with any provision of this Trust Indenture, any other agreement relating to the Bonds to which it is a party or in complying with any request by the SFPUC or any securities credit rating agency with respect to the Bonds, including the reasonable compensation, expenses and disbursements of its agents and counsel, except any such expense, disbursement or advance attributable to the Trustee's negligence or bad faith; and

(iii) to indemnify, defend and hold the Trustee harmless from and against any loss, liability or expense incurred without negligence or bad faith on its part, arising out of or in connection with the acceptance or administration of the office of Trustee under this Trust Indenture, including the costs of defending itself against any claim or liability in connection with the exercise or performance of any of its powers or duties hereunder or thereunder.

(b) In the event the Trustee incurs expenses or renders services in any proceedings under federal or state bankruptcy law relating to the SFPUC, the expenses so incurred and compensation for services so rendered are intended to constitute expenses of administration under federal or state bankruptcy law. As security for the performance of the obligations of the

SFPUC under this Section, the Trustee shall have a lien prior to the lien securing the Bonds and Swap Agreement Payments, which it may exercise through a right of setoff, upon all property or funds held or collected by the Trustee pursuant to this Trust Indenture. The obligations of the SFPUC to make the payments described in this Section shall survive discharge of this Trust Indenture, the resignation or removal of the Trustee and payment in full of the Bonds.

**Section 9.6. Qualifications of the Trustee.** There shall at all times be a trustee hereunder which shall 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 has a combined capital and surplus of at least \$100,000,000, 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 this Section, the combined capital and surplus of such corporation or banking association shall 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 shall cease to be eligible in accordance with the provisions of this Section, it shall resign promptly in the manner and with the effect specified in this Article.

**Section 9.7. 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 this Article shall become effective until the acceptance of appointment by the successor Trustee under Section 9.8.

(b) The Trustee may resign at any time by giving written notice to the SFPUC. Upon receiving such notice of resignation, the SFPUC shall 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 hereunder, 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 shall appoint a successor Trustee. In the event there shall have occurred and be continuing an Event of Default hereunder, the Owners of a majority in aggregate Principal amount of the Outstanding Bonds may remove the Trustee and shall appoint a successor Trustee. In each instance such removal and appointment shall 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 Section 9.6 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 of subsection (c) of this Section; 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 shall 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 shall include the name and address of the applicable corporate trust office of the successor Trustee.

#### **Section 9.8. Acceptance of Appointment by Successor Trustee.**

(a) Every successor Trustee appointed hereunder shall execute, acknowledge and deliver to the SFPUC and the predecessor Trustee an instrument accepting its appointment. The resignation or removal of the retiring Trustee shall thereupon become effective, and the successor Trustee shall, without further act, deed or conveyance, become vested with all the estates, properties, rights, powers and duties of the predecessor Trustee. Upon the request of the SFPUC or the successor Trustee, the predecessor Trustee shall execute and deliver an instrument transferring to the successor Trustee all the estates, properties, rights, powers and duties of the predecessor Trustee under this Trust Indenture, and shall duly assign, transfer, deliver and pay over to the successor Trustee all money and other property then held under this Trust Indenture, subject, however, to the lien provided for in Section 9.5. The successor Trustee shall promptly give written notice of its appointment to the Owners of all Bonds Outstanding in the manner prescribed herein, unless such notice has previously been given.

(b) No successor Trustee shall accept appointment as provided in this Section unless, as of the date of such acceptance, it is eligible and qualified under the provisions of Section 9.6.

**Section 9.9. 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, shall 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 Section 9.6.

#### **Section 9.10. Notices to Owners; Waiver.**

(a) Where this Trust Indenture provides for notice to Owners of any event, such notice shall be sufficiently given (unless otherwise expressly provided herein) 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 shall affect the sufficiency of such notice with respect to other Owners. Where this Trust 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 shall be the equivalent of such notice. Waivers of notice by Owners shall be filed with the Trustee, but such filing shall not be a condition precedent to the validity of any action taken in reliance upon such waiver.

(b) The Trustee, on behalf of and at the expense of the SFPUC, shall maintain the Beneficial Owner Register in which the Trustee shall record the name and address of any person that is identified to the Trustee as a Beneficial Owner and for which the Trustee has: (i) information sufficient to permit delivery of first class mail and (ii) either: (x) a certificate executed, as depository or securities intermediary, by any trust company, bank, banker or member of a national securities exchange (wherever situated), if such certificate is in form satisfactory to the Trustee, or (y) a certificate or affidavit of the Person executing such instrument or writing as a Beneficial Owner if such certificate or affidavit is in form satisfactory to the Trustee or (z) such other instrument or writing as the Trustee deems sufficient for the purposes of this Section. Neither the Trustee nor the SFPUC shall be responsible for the accuracy of the Beneficial Owner Register, and no Person listed in the Beneficial Owner Register shall be entitled to any rights under this Trust Indenture other than the right to receive notices in the manner provided in subsection (c) of this Section.

(c) With respect to Book-Entry Bonds, where this Trust Indenture provides for notice to the Owners of the existence of, or during the continuance of, any Event of Default, or at any time upon the written request of the SFPUC, the Trustee, at the expense of the SFPUC, shall: (i) establish a record date for determination of the Persons entitled to receive such notice; (ii) request a securities position listing from the Securities Depository showing the participants holding positions in the Book-Entry Bonds affected by such notice as of the record date for such notice; (iii) mail, first class postage prepaid, copies of the notice as provided above to each participant identified in the securities position listing as holding a position in the Book-Entry Bonds as of the record date for the notice, to each Person listed in the Beneficial Owner Register, to each nationally recognized municipal securities information repository and state information depository (within the meaning of Rule 15c2-12 of the United States Securities and Exchange SFPUC under the Securities Exchange Act of 1934, as amended), and to any Person identified to the Trustee as a non-objecting Beneficial Owner pursuant to the immediately following clause; (iv) request that the participant retransmit the notice to all Persons for which it served as nominee on the record date, including non-objecting Beneficial Owners, or retransmit the notice to objecting Beneficial Owners and provide a listing of non-objecting Beneficial Owners for whom the participant served as nominee on the record date to the Trustee, (v) provide on behalf of the SFPUC and not as its agent, an undertaking of the SFPUC to pay to any participant or other nominee (other than the Securities Depository) the reasonable costs of transmitting the notice to Persons for whom the participant acts as nominee; and (vi) provide as many copies of the notice as may be requested by any nominee owner of the Bonds. Any default in performance of the duties required by this subsection shall not affect the sufficiency of notice to the Owners given in accordance with subsection (a) of this Section, nor the validity of any action taken under this Trust Indenture in reliance on such notice to Owners.

(d) Where this Trust Indenture provides for notice to the Owners of any event, the form of the notice shall prominently include a title block, separate from the body of the notice, which shall 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.

(e) Any notice required or permitted by this Trust Indenture to be given to the Securities Depository shall be given to it in the manner provided by this Section for giving notice to Owners, and also shall 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.

**Section 9.11. City Contracting Provisions.** The Trustee agrees to observe and perform the covenants and agreements set forth in Appendix A hereto, which is incorporated herein by this reference, and any amendments thereof or supplements thereto as may be set forth in a Supplemental Trust Indenture.

## ARTICLE X DISCHARGE AND DEFEASANCE

**Section 10.1. 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 shall be paid, or is caused to be paid, or is provided for under Section 10.2, 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 shall have been paid and discharged in accordance with this Article, and (b) and all Swap Agreement Payments and other payments due in accordance with the provisions of the Swap Agreements and this Trust Indenture have been made and (c) all of the covenants, agreements, obligations, terms and conditions of the SFPUC under this Trust Indenture shall have been kept, performed and observed and there shall have been paid to the Trustee all sums of money due or to become due to it in accordance with the terms and provisions hereof, then the right, title and interest of the Trustee in all money and other property then held under this Trust Indenture shall thereupon cease and the Trustee, on request of and at the expense of the SFPUC, shall release this Trust Indenture and shall execute such documents to evidence such release as may be reasonably required by the SFPUC and shall 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 Section 2.11.

**Section 10.2. 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) shall cease, such Bond or Bonds (or portions thereof) shall be deemed not to be Outstanding hereunder and the Owner or Owners of such Bond or Bonds (or portions thereof) shall 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 shall hold such money, Government Securities and earnings in trust exclusively for such Owner or Owners and such money, Government Securities and earnings shall not secure any other Bonds under this Trust Indenture.

In determining the sufficiency of the money and Government Securities deposited pursuant to this Section, the Trustee shall 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 the Trustee; and (b) an opinion of Bond Counsel to the effect that (1) all conditions set forth in this Article 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, shall 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 hereunder, as aforesaid, it shall no longer be secured by or entitled to the benefits of this Trust Indenture, except for the purposes of any such payment from such money or Government Securities and except for the provisions of this Section.

### **Section 10.3. Notice of Defeasance.**

(a) If money or non-callable Government Securities have been deposited with the Trustee pursuant to Section 10.2 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 shall be selected by the Trustee by lot by such method as shall 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 shall be made within seven days after the money or Government Securities have been deposited with the Trustee. This selection process shall be in lieu of the selection process otherwise provided with respect to redemption of Bonds in Article IV. 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 this Trust Indenture) shall be identified by a separate CUSIP number or other designation satisfactory to the Trustee. The Trustee shall notify Owners whose Bonds (or portions thereof) have been selected for payment from the money or Government Securities on deposit and shall 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 this subsection shall be conclusive and binding on the SFPUC. The SFPUC shall 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 shall promptly give such notice to the Owners including the information required under Section 4.3.

(b) In case any of the Bonds, for the payment of which money or Government Securities have been deposited with the Trustee pursuant to Section 10.2, are to be redeemed on any date prior to their maturity, the SFPUC, in addition to any notice required under subsection (a) of this Section, shall 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 Section 4.3.

(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 shall

give further notice to the Owners that the deposit required by Section 10.2 has been made with the Trustee and that said Bonds are deemed to have been paid in accordance with this Article 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 shall be given promptly following the making of the deposit required by Section 10.2; and such further notice also shall be given in the manner set forth in Section 4.3(c); but no defect in such further notice nor any failure to give all or any portion of such further notice shall in any manner defeat the effectiveness of the deposit.

(d) If the SFPUC has retained any rights pursuant to the last sentence of Section 10.2, notice thereof shall be sent to Owners of such Bonds as soon as practicable and not later than any notice required by subsections (a) or (b) of this Section.

## ARTICLE XI SUPPLEMENTAL INDENTURES

### Section 11.1. 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 this Trust Indenture;

(ii) cure any ambiguity or defect or omission or correct or supplement any provision herein 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 this Trust Indenture as then in effect or to subject to the pledge and lien of this Trust Indenture additional revenues, properties or collateral;

(iv) add to the covenants and agreements of the SFPUC in this Trust Indenture other covenants and agreements thereafter to be observed by the SFPUC or to surrender any right or power herein reserved to or conferred upon the SFPUC that are not contrary to or inconsistent with this Trust Indenture as then in effect;

(v) permit the appointment of a co-trustee under this Trust Indenture;

(vi) modify, alter, supplement or amend this Trust Indenture in such manner as shall permit the qualification of this Trust Indenture, if required, under the Trust 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 herein that the Trustee determines shall not be materially adverse to the interests of the Owners and which does not involve a change

described in Section 11.2 requiring consents of specific Owners; provided, that whether a Credit Facility is in place to further secure a Series of Bonds shall 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 Section 2.10 or other provisions relating to Book Entry Bonds.

**Section 11.2. 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 this Trust Indenture, but only with the written consent, given as provided in Section 11.3, 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 shall not be required and such Bonds shall not be deemed to be Outstanding for the purpose of any calculation of Outstanding Bonds under this Section. Notwithstanding the foregoing, no modification or amendment contained in any such Supplemental Trust Indenture shall 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 this Trust 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 of Section 8.15. 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 hereunder for the payment of the Principal, Purchase Price or Redemption Price of and interest on the Bonds shall 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 this Section shall be given to the Owners promptly following the adoption thereof by the SFPUC.

**Section 11.3. Consent of Owners and Opinions.** Each Supplemental Trust Indenture executed and delivered pursuant to the provisions of Section 11.2 shall take effect only when and as provided in this Section. 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, shall 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 shall not affect the validity of the Supplemental Trust Indenture when consented to as provided hereinafter. Such Supplemental Trust Indenture shall not be effective unless and until there shall have been filed with the Trustee (a) the written consents of Owners of the percentage of Bonds specified in Section 11.2 given as provided in



Section 13.12, and (b) the written opinion of Bond Counsel described in Section 11.6. Any such consent shall 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 in subsections (a) and (b) of this Section. Notwithstanding anything else herein, if a Supplemental Trust Indenture is to become effective under Section 11.2 on the same date as the date of issuance of a Series of Bonds, the consents of the underwriters of such Series of Bonds shall be counted for purposes of Section 11.2 and this Section.

**Section 11.4. Consent of Trustee and Qualified Counterparties.**

(a) Notwithstanding any provision of this Article to the contrary, the SFPUC shall not adopt any Supplemental Trust Indenture that adversely affects the rights, duties or immunities of the Trustee under this Trust Indenture without having received the prior written consent of the Trustee.

(b) Notwithstanding any provision of this Article to the contrary, the SFPUC shall not adopt any Supplemental Trust Indenture that materially and adversely affects the rights or duties of any Qualified Counterparty under this Trust Indenture without having received the prior written consent of each such Qualified Counterparty.

**Section 11.5. Notation on Bonds.** Bonds authenticated and delivered after the effective date of any action taken as provided in this Article may, and, if the SFPUC so determines, shall 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 shall 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 shall so determine, new Bonds so modified as in the opinion of the Trustee and the SFPUC to conform to such action shall be prepared, authenticated and delivered, and upon demand of the Owner of any Bond then Outstanding shall 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.

**Section 11.6. Delivery of Opinion.** Subject to the provisions of Section 9.1, the Trustee in executing or accepting the additional trusts permitted by this Article or the modifications thereby of the trusts created by this Trust Indenture may rely, and shall be fully protected in relying, on an opinion of Bond Counsel acceptable to it stating that (a) the execution of such Supplemental Trust Indenture is authorized or permitted by this Trust 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 this Article complies with the requirements of this Article.

**Section 11.7. Effect of Supplemental Trust Indentures.** Upon the adoption of any Supplemental Trust Indenture under this Article, this Trust Indenture shall be modified in accordance therewith, and such Supplemental Trust Indenture shall form a part of this Trust Indenture for all purposes; and every Owner of any Bond theretofore or thereafter authenticated and delivered hereunder shall be bound thereby.

## ARTICLE XII MISCELLANEOUS

**Section 12.1. Trust Indenture a Contract.** This Trust Indenture is executed and delivered under the authority of and in full compliance with the Constitution and Laws of the State and the Charter of the City, each as amended and supplemented. In consideration of the purchase and acceptance of the Bonds by those who shall own the same from time to time, the provisions of this Trust Indenture and of any Supplemental Trust Indenture and of such laws shall constitute a contract with the Owner of each Bond, and the obligations of the SFPUC and its SFPUC under such acts and under this Trust Indenture shall be enforceable by any court of competent jurisdiction; and the covenants and agreements herein set forth to be performed on behalf of the SFPUC shall be for the equal benefit, protection and security of the Owners of any and all of such Bonds, all of which, regardless of the time or times of their issue or maturity or date of, shall be of equal rank without preference, priority or distinction of any of such Bonds over any others thereof except as expressly provided herein or in any Supplemental Trust Indenture.

**Section 12.2. Liability of SFPUC Limited to Revenues.** The 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 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 this Trust Indenture) shall be liable for the payment on the 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 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 Bonds. 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 SFPUC or any of its income or receipts, except Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits.

**Section 12.3. No Personal Liability.** No SFPUC member, officer, agent or employee of the SFPUC or the Trustee shall be individually or personally liable for the payment of the Bonds or be subject to any personal liability or accountability by reason of the issuance thereof; but nothing herein contained shall relieve any such SFPUC member, officer, agent or employee of the SFPUC or the Trustee from the performance of any official duty provided by law or by this Trust Indenture.

**Section 12.4. Limitation of Rights.** Nothing in this Trust Indenture or in the Bonds expressed or implied is intended or shall 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 this Trust Indenture or any covenant, condition or provision herein or therein contained; and all the covenants, conditions and provisions in this Trust Indenture contained are and shall 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 shall be a third-party beneficiary of this Trust Indenture.

**Section 12.5. 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 shall apply:

(a) Such Credit Facility Provider, and not the actual Owners, shall 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 this Trust Indenture requiring the consent of Owners of such Series of Bonds shall also require the prior written consent of such Credit Facility Provider.

(c) Any amendment to this Trust Indenture not requiring the consent of Owners of such Series of Bonds shall require the prior written consent of such Credit Facility Provider if its rights shall be materially and adversely affected by such amendment.

(d) The prior written consent of such Credit Facility Provider shall 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 shall be fully discharged.

(f) Such Credit Facility Provider shall 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 this Trust Indenture.

(g) Such Credit Facility Provider shall, 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 shall not be deemed paid for purposes of this Trust Indenture, and the Bonds with respect to which such payments were made shall remain Outstanding and continue to be due and owing until paid by the SFPUC in accordance with this Trust Indenture.

(i) In the event of any defeasance of such Series of Bonds, the SFPUC shall provide such Credit Facility Provider with copies of all documents required by Article X to be delivered to the Trustee.

(j) The SFPUC shall not discharge this Trust 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 shall send or cause to be sent to such Credit Facility Provider copies of notices required to be sent to Owners or the Trustee under this Trust Indenture.

(l) The SFPUC shall 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.

**Section 12.6. Severability.** If any term or provision of this Trust Indenture or the Bonds shall be invalid, inoperative or unenforceable as applied in any particular case in any jurisdiction or jurisdictions or in all jurisdictions, or in all cases because it conflicts with any other provision or provisions hereof or any constitution or statute or rule of public policy, or for any other reason, such circumstances shall not have the effect of rendering the provision in question inoperative or unenforceable in any other case or circumstance, or of rendering any other provision or provisions herein contained invalid, inoperative, or unenforceable to any extent whatever, and such term and provision shall be valid and enforced to the fullest extent permitted by law.

**Section 12.7. Notices.** Except as otherwise provided herein, all notices, certificates or other communications hereunder shall be in writing and shall be deemed given upon receipt, by hand delivery, mail, overnight delivery, telecopy or other electronic means addressed as follows: to the SFPUC at 525 Golden Gate Avenue, San Francisco, California 94102, Attention: General Manager; and to the Trustee at [\_\_\_\_\_]. If the Trustee determines that it is impracticable to give a required notice to any Owner by first class mail, , then the Trustee shall give such notice in such other manner as the Trustee determines is sufficient. The SFPUC and the Trustee may, by notice pursuant to this Section, designate any different addresses to which subsequent notices, certificates or other communications shall be sent.

**Section 12.8. Holidays.** If the date for making any payment or the last date for performance of any act or the exercising of any right, as provided in this Trust Indenture, is not a Business Day, such payment may be made or act performed or right exercised on the next succeeding Business Day with the same force and effect as if done on the nominal date provided in this Trust Indenture and except as otherwise provided in a Supplemental Trust Indenture, no interest shall accrue on the payment so deferred during the intervening period.

**Section 12.9. Applicable Law.** This Trust Indenture shall be governed in all respects including validity, interpretation and effect by, and shall be enforceable in accordance with, the laws of the State.

**Section 12.10. Successors and Assigns.** All the covenants, promises and agreements in this Trust Indenture contained by or on behalf of the SFPUC, or by or on behalf of the Trustee, shall bind and inure to the benefit of their respective successors and assigns, whether so expressed or not.

**Section 12.11. Form of Documents Delivered to Trustee.** In any case where several matters are required to be certified by, or covered by an opinion of, any specified person, it is not necessary that all such matters be certified by, or covered by the opinion of, only one such person, or that they be so certified or covered by only one document, but one such person may certify or give an opinion with respect to some matters and one or more other such persons as to other matters, and any such person may certify or give an opinion as to such matters in one or several documents. Any Certificate of the SFPUC may be based, insofar as it relates to legal matters, upon a certificate or opinion of, or representations by, counsel, unless such official or officer knows, or in the exercise of reasonable care should know, that the certificate or opinion or representations with respect to the matters upon which such official's certificate or opinion is based are erroneous. Any opinion of counsel may be based, insofar as it relates to factual matters, upon a certificate or opinion of, or representations by, an official or officials of the SFPUC stating that the information with respect to such factual matters is in the possession of the SFPUC, unless such counsel knows, or in the exercise of reasonable care should know, that the certificate or opinion or representations with respect to such matters are erroneous. Where any person is required to make, give or execute two or more applications, requests, consents, certificates, statements, opinions or other instruments under this Trust Indenture, they may, but need not, be consolidated and form one instrument.

**Section 12.12. Consent of Owners.** Any consent, request, direction, approval, objection or other instrument required by this Trust Indenture to be signed and executed by the Owners may be in any number of concurrent writings of similar tenor and must be signed or executed by such Owners in person or by agent appointed in writing. Proof of the execution of any such consent, request, direction, approval, objection or other instrument or of the writing appointing any such agent and of the ownership of Bonds, if made in the following manner, shall be sufficient for any of the purposes of this Trust Indenture, and shall be conclusive in favor of the Trustee with regard to any action taken by it under such request or other instrument, namely: (a) the fact and date of the execution by any person of any such writing may be proved by the certificate of any officer in any jurisdiction who by law has power to take acknowledgments within such jurisdiction that the person signing such writing acknowledged the execution thereof, or by an affidavit of any witness to such execution; and (b) the Trustee may establish a record date for the purpose of identifying Owners entitled to issue any such consent, request, direction, approval or instrument.

IN WITNESS WHEREOF, the SFPUC and the Trustee have caused this Trust Indenture to be executed on their behalf by their duly authorized representatives, all as of the day and year first written above.

**PUBLIC UTILITIES COMMISSION OF THE  
CITY AND COUNTY OF SAN FRANCISCO**

By: \_\_\_\_\_  
General Manager

Approved as to Form:

DENNIS J. HERRERA  
City Attorney of the  
City and County of San Francisco

By \_\_\_\_\_  
Deputy City Attorney

[TRUSTEE]

By: \_\_\_\_\_  
Authorized Officer

**APPENDIX A**  
**CITY CONTRACTING PROVISIONS**

**Section 1. Nondiscrimination; Penalties.**

(a) Trustee Shall Not Discriminate. In the performance of this Agreement, the Trustee agrees not to discriminate against any employee, City employee working with the Trustee, applicant for employment with the Trustee, or against any person seeking accommodations, advantages, facilities, privileges, services, or membership in all business, social, or other establishments or organizations, on the basis of the fact or perception of a person's race, color, creed, religion, national origin, ancestry, age, height, weight, sex, sexual orientation, gender identity, domestic partner status, marital status, disability or Acquired Immune Deficiency Syndrome or HIV status (AIDS/HIV status), or association with members of such protected classes, or in retaliation for opposition to discrimination against such classes.

(b) Subcontracts. The Trustee shall incorporate by reference in all subcontracts related to this Agreement the provisions of §§12B.2(a), 12B.2(c)-(k), and 12C.3 of the San Francisco Administrative Code (copies of which are available from the Commission) and shall require all subcontractors to comply with such provisions. The Trustee's failure to comply with the obligations in this subsection shall constitute a material breach of this Agreement.

(c) Nondiscrimination in Benefits. Trustee does not as of the date of this Agreement and will not during the term of this Agreement, in any of its operations in San Francisco, on real property owned by the City, or where work is being performed for the City elsewhere in the United States, discriminate in the provision of bereavement leave, family medical leave, health benefits, membership or membership discounts, moving expenses, pension and retirement benefits or travel benefits, as well as any benefits other than the benefits specified above, between employees with domestic partners and employees with spouses, and/or between the domestic partners and spouses of such employees, where the domestic partnership has been registered with a governmental entity pursuant to state or local law authorizing such registration, subject to the conditions set forth in §12B.2(b) of the San Francisco Administrative Code.

(d) Condition to Contract. As a condition to this Agreement, Trustee shall execute the "Chapter 12B Declaration: Nondiscrimination in Contracts and Benefits" form (form HRC-12B-101) with supporting documentation and secure the approval of the form by the San Francisco Human Rights Commission.

(e) Incorporation of Administrative Code Provisions by Reference. The provisions of Chapters 12B and 12C of the San Francisco Administrative Code are incorporated in this Section by reference and made a part of this Agreement as though fully set forth herein. Trustee shall comply fully with and be bound by all of the provisions that apply to this Agreement under such Chapters, including but not limited to the remedies provided in such Chapters. Without limiting the foregoing, Trustee understands that pursuant to §§12B.2(h) and 12C.3(g) of the San Francisco Administrative Code, a penalty of \$50 for each person for each calendar day during which such person was discriminated against in violation of the provisions of this Agreement may be assessed against Trustee and/or deducted from any payments due Trustee.

**Section 2. MacBride Principles -- Northern Ireland.** Pursuant to San Francisco Administrative Code §12F.5, the City urges companies doing business in Northern Ireland to move towards resolving employment inequities, and encourages such companies to abide by the MacBride Principles. The City urges San Francisco companies to do business with corporations that abide by the MacBride Principles. By signing this Agreement, the person executing this agreement on behalf of Trustee acknowledges and agrees that he or she has read and understood this section.

**Section 3. Tropical Hardwood and Virgin Redwood.** Pursuant to §804(b) of the San Francisco Environment Code, the Commission urges contractors not to import, purchase, obtain, or use for any purpose, any tropical hardwood, tropical hardwood wood product, virgin redwood or virgin redwood wood product.

**Section 4. Sunshine Ordinance.** In accordance with San Francisco Administrative Code §67.24(e), contracts, bids, responses to solicitations and all other records of communications between the Commission or the City and persons or firms seeking contracts, shall be open to inspection immediately after a contract has been awarded. Nothing in this provision requires the disclosure of a private person or organization's net worth or other proprietary financial data submitted for qualification for a contract or other benefit until and unless that person or organization is awarded the contract or benefit. Information provided which is covered by this paragraph will be made available to the public upon request.

**Section 5. Limitations on Contributions.** Through execution of this Agreement, the Trustee acknowledges that it is familiar with section 1.126 of the City's Campaign and Governmental Conduct Code, which prohibits any person who contracts with the City for the rendition of personal services, for the furnishing of any material, supplies or equipment, for the sale or lease of any land or building, or for a grant, loan or loan guarantee, from making any campaign contribution to (1) an individual holding a City elective office if the contract must be approved by the individual, a board on which that individual serves, or the board of a state agency on which an appointee of that individual serves, (2) a candidate for the office held by such individual, or (3) a committee controlled by such individual, at any time from the commencement of negotiations for the contract until the later of either the termination of negotiations for such contract or six months after the date the contract is approved. The Trustee acknowledges that the foregoing restriction applies only if the contract or a combination or series of contracts approved by the same individual or board in a fiscal year have a total anticipated or actual value of \$50,000 or more. The Trustee further acknowledges that the prohibition on contributions applies to each prospective party to the contract; each member of the Trustee's board of directors; the Trustee's chairperson, chief executive officer, chief financial officer and chief operating officer; any person with an ownership interest of more than 20% in the Trustee; any subcontractor listed in the bid or contract; and any committee that is sponsored or controlled by the Trustee. Additionally, the Trustee acknowledges that the Trustee must inform each of the persons described in the preceding sentence of the prohibitions contained in Section 1.126. The Trustee further agrees to provide to the City the names of each person, entity or committee described above.



**Section 6. Requiring Minimum Compensation for Covered Employees.**

(a) The Trustee agrees to comply fully with and be bound by all of the provisions of the Minimum Compensation Ordinance (MCO), as set forth in San Francisco Administrative Code Chapter 12P (Chapter 12P), including the remedies provided, and implementing guidelines and rules. The provisions of Sections 12P.5 and 12P.5.1 of Chapter 12P are incorporated herein by reference and made a part of this Agreement as though fully set forth. The text of the MCO is available on the web at [www.sfgov.org/olse/mco](http://www.sfgov.org/olse/mco). A partial listing of some of the Trustee's obligations under the MCO is set forth in this Section. The Trustee is required to comply with all the provisions of the MCO, irrespective of the listing of obligations in this Section.

(b) The MCO requires the Trustee to pay the Trustee's employees a minimum hourly gross compensation wage rate and to provide minimum compensated and uncompensated time off. The minimum wage rate may change from year to year and the Trustee is obligated to keep informed of the then-current requirements. Any subcontract entered into by the Trustee shall require the subcontractor to comply with the requirements of the MCO and shall contain contractual obligations substantially the same as those set forth in this Section. It is the Trustee's obligation to ensure that any subcontractors of any tier under this Agreement comply with the requirements of the MCO. If any subcontractor under this Agreement fails to comply, the City may pursue any of the remedies set forth in this Section against the Trustee.

(c) The Trustee shall not take adverse action or otherwise discriminate against an employee or other person for the exercise or attempted exercise of rights under the MCO. Such actions, if taken within 90 days of the exercise or attempted exercise of such rights, will be rebuttably presumed to be retaliation prohibited by the MCO.

(d) The Trustee shall maintain employee and payroll records as required by the MCO. If the Trustee fails to do so, it shall be presumed that the Trustee paid no more than the minimum wage required under State law.

(e) The City, upon reasonable notice to the Trustee and subject to applicable laws and regulations, is authorized to inspect the Trustee's job sites and conduct interviews with employees and conduct audits of the Trustee.

(f) The Trustee's commitment to provide the Minimum Compensation required by the MCO is a material element of the City's consideration for this Agreement. The City in its sole discretion shall determine whether such a breach has occurred. The City and the public will suffer actual damage that will be impractical or extremely difficult to determine if the Trustee fails to comply with these requirements. The Trustee agrees that the sums set forth in Section 12P.6.1 of the MCO as liquidated damages are not a penalty, but are reasonable estimates of the loss that the City and the public may incur for the Trustee's noncompliance. The procedures governing the assessment of liquidated damages shall be those set forth in Section 12P.6.2 of Chapter 12P.

(g) The Trustee understands and agrees that if it fails to comply with the requirements of the MCO, the City shall have the right to pursue any rights or remedies available

under Chapter 12P (including liquidated damages), under the terms of the contract, and under applicable law. If, within 30 days after receiving written notice of a breach of this Agreement for violating the MCO, the Trustee fails to cure such breach or, if such breach cannot reasonably be cured within such period of 30 days, the Trustee fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, the City shall have the right to pursue any rights or remedies available under applicable law, including those set forth in Section 12P.6(c) of Chapter 12P. Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to the City.

(h) The Trustee represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the MCO.

(i) If the Trustee is exempt from the MCO when this Agreement is executed because the cumulative amount of agreements with the Commission for the fiscal year is less than \$25,000, but the Trustee later enters into an agreement or agreements that cause the Trustee to exceed that amount in a fiscal year, the Trustee shall thereafter be required to comply with the MCO under this Agreement. This obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between the Trustee and the Commission to exceed \$25,000 in the fiscal year.

**Section 7. Requiring Health Benefits for Covered Employees.** The Trustee agrees to comply fully with and be bound by all of the provisions of the Health Care Accountability Ordinance (HCAO), as set forth in San Francisco Administrative Code Chapter 12Q, including the remedies provided, and implementing regulations, as the same may be amended from time to time. The provisions of Section 12Q.5.1 of Chapter 12Q are incorporated by reference in this Section and made a part of this Agreement as though fully set forth herein. The text of the HCAO is available on the web at [www.sfgov.org/olse](http://www.sfgov.org/olse). Capitalized terms used in this Section and not defined in this Agreement shall have the meanings assigned to such terms in Chapter 12Q.

(a) For each Covered Employee, the Trustee shall provide the appropriate health benefit set forth in Section 12Q.3 of the HCAO. If the Trustee chooses to offer the health plan option, such health plan shall meet the minimum standards set forth by the San Francisco Health Commission.

(b) Notwithstanding the above, if the Trustee is a small business as defined in Section 12Q.3(e) of the HCAO, it shall have no obligation to comply with part (a) above.

(c) The Trustee's failure to comply with the HCAO shall constitute a material breach of this agreement. City shall notify the Trustee if such a breach has occurred. If, within 30 days after receiving City's written notice of a breach of this Agreement for violating the HCAO, the Trustee fails to cure such breach or, if such breach cannot reasonably be cured within such period of 30 days, the Trustee fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, the City shall have the right to pursue the remedies set forth in 12Q.5.1 and 12Q.5(f)(1-6). Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to the City.

(d) Any Subcontract entered into by the Trustee shall require the Subcontractor to comply with the requirements of the HCAO and shall contain contractual obligations substantially the same as those set forth in this Section. The Trustee shall notify City's Office of Contract Administration when it enters into such a Subcontract and shall certify to the Office of Contract Administration that it has notified the Subcontractor of the obligations under the HCAO and has imposed the requirements of the HCAO on Subcontractor through the Subcontract. Each Trustee shall be responsible for its Subcontractors' compliance with this Chapter. If a Subcontractor fails to comply, the City may pursue the remedies set forth in this Section against the Trustee based on the Subcontractor's failure to comply, provided that the City has first provided the Trustee with notice and an opportunity to obtain a cure of the violation.

(e) The Trustee shall not discharge, reduce in compensation, or otherwise discriminate against any employee for notifying City with regard to the Trustee's noncompliance or anticipated noncompliance with the requirements of the HCAO, for opposing any practice proscribed by the HCAO, for participating in proceedings related to the HCAO, or for seeking to assert or enforce any rights under the HCAO by any lawful means.

(f) The Trustee represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the HCAO.

(g) The Trustee shall maintain employee and payroll records in compliance with the California Labor Code and Industrial Welfare Commission orders, including the number of hours each employee has worked on the Agreement.

(h) The Trustee shall keep itself informed of the current requirements of the HCAO.

(i) The Trustee shall provide reports to the City in accordance with any reporting standards promulgated by the City under the HCAO, including reports on Subcontractors and Subtenants, as applicable.

(j) The Trustee shall, subject to applicable laws and regulations, provide City with access to records pertaining to compliance with HCAO after receiving a written request from City to do so and being provided at least ten business days to respond.

(k) The Trustee shall, subject to applicable laws and regulations, allow City to inspect Trustee's job sites and have access to Trustee's employees in order to monitor and determine compliance with HCAO.

(l) City may, subject to applicable laws and regulations, conduct random audits of the Trustee to ascertain its compliance with HCAO. The Trustee agrees to cooperate with City when it conducts such audits.

(m) If the Trustee is exempt from the HCAO when this Agreement is executed because its amount is less than \$25,000 (\$50,000 for nonprofits), but the Trustee later enters into an agreement or agreements that cause the Trustee's aggregate amount of all agreements with the City to reach \$75,000, all the agreements shall be thereafter subject to the HCAO. This

obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between the Trustee and the City to be equal to or greater than \$75,000 in the fiscal year.

**Section 8. Drug-Free Workplace Policy.** The Trustee acknowledges that pursuant to the Federal Drug-Free Workplace Act of 1989, the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited on City premises. The Trustee agrees that any violation of this prohibition by the Trustee, its employees, agents or assigns will be deemed a material breach of this Agreement.

**Section 9. Compliance with Americans with Disabilities Act.** The Trustee acknowledges that, pursuant to the Americans with Disabilities Act (ADA), programs, services and other activities provided by a public entity to the public, whether directly or through a contractor, must be accessible to the disabled public. The Trustee shall provide the services specified in this Agreement in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. The Trustee agrees not to discriminate against disabled persons in the provision of services, benefits or activities provided under this Agreement and further agrees that any violation of this prohibition on the part of the Trustee, its employees, agents or assigns will constitute a material breach of this Agreement.

**Section 10. Protection of Private Information.** The Trustee has read and agrees to the terms set forth in San Francisco Administrative Code Sections 12M.2, "Nondisclosure of Private Information," and 12M.3, "Enforcement" of Administrative Code Chapter 12M, "Protection of Private Information," which are incorporated in this Section as if fully set forth. The Trustee agrees that any failure of the Trustee to comply with the requirements of Section 12M.2 of this Chapter shall be a material breach of this Agreement. In such an event, in addition to any other remedies available to it under equity or law, the City may terminate this Agreement, bring a false claim action against the Trustee pursuant to Chapter 6 or Chapter 21 of the Administrative Code, or debar the Trustee.

**Section 11. Prohibition on Political Activity with City Funds.** In accordance with San Francisco Administrative Code Chapter 12.G, the Trustee may not participate in, support, or attempt to influence any political campaign for a candidate or for a ballot measure (collectively, "Political Activity") in the performance of the services provided under this Agreement. The Trustee agrees to comply with San Francisco Administrative Code Chapter 12.G and any implementing rules and regulations promulgated by the City's Controller. The terms and provisions of Chapter 12.G are incorporated herein by this reference. In the event the Trustee violates the provisions of this section, the City may, in addition to any other rights or remedies available hereunder, (i) terminate this Agreement, and (ii) prohibit the Trustee from bidding on or receiving any new City contract for a period of two (2) years. The Controller will not consider the Trustee's use of profit as a violation of this section.

**Section 12. Airport Intellectual Property.** Pursuant to Resolution No. 01-0118, adopted by the Airport Commission on April 18, 2001, the Airport Commission affirmed that it will not tolerate the unauthorized use of its intellectual property, including the SFO logo, CADD designs, and copyrighted publications. All proposers, bidders, contractors, tenants, permittees, and others doing business with or at the Airport (including subcontractors and subtenants) may

not use the Airport intellectual property, or any intellectual property confusingly similar to the Airport intellectual property, without the Airport Director's prior consent.

**Section 13. Food Service Waste Reduction Requirements.** The Trustee agrees to comply fully with and be bound by all of the provisions of the Food Service Waste Reduction Ordinance, as set forth in San Francisco Environment Code Chapter 16, including the remedies provided, and implementing guidelines and rules. The provisions of Chapter 16 are incorporated in this Section by reference and made a part of this Agreement as though fully set forth. This provision is a material term of this Agreement. By entering into this Agreement, the Trustee agrees that if it breaches this provision, the City may suffer actual damages that will be impractical or extremely difficult to determine; further, the Trustee agrees that the sum of one hundred dollars (\$100) liquidated damages for the first breach, two hundred dollars (\$200) liquidated damages for the second breach in the same year, and five hundred dollars (\$500) liquidated damages for subsequent breaches in the same year is a reasonable estimate of the damage that the City will incur based on the violation, established in light of the circumstances existing at the time this Agreement was made. Such amount shall not be considered a penalty, but rather agreed monetary damages sustained by the City because of the Trustee's failure to comply with this provision.

**Section 14. Submitting False Claims; Monetary Penalties.** Pursuant to San Francisco Administrative Code §21.35, any contractor, subcontractor or consultant who submits a false claim shall be liable to the City for the statutory penalties set forth in that section. The text of Section 21.35, along with the entire San Francisco Administrative Code is available on the web at:

[http://www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:sanfrancisco\\_ca](http://www.amlegal.com/nxt/gateway.dll?f=templates&fn=default.htm&vid=amlegal:sanfrancisco_ca)

A contractor, subcontractor or consultant will be deemed to have submitted a false claim to the City if the contractor, subcontractor or consultant: (a) knowingly presents or causes to be presented to an officer or employee of the City a false claim or request for payment or approval; (b) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or approved by the City; (c) conspires to defraud the City by getting a false claim allowed or paid by the City; (d) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the City; or (e) is a beneficiary of an inadvertent submission of a false claim to the City, subsequently discovers the falsity of the claim, and fails to disclose the false claim to the City within a reasonable time after discovery of the false claim.

**Section 15. Conflict of Interest.** By entering into this Agreement, the Trustee acknowledges that it is familiar with the provision of Section 15.103 of the City's Charter, Article III, Chapter 2 of City's Campaign and Governmental Conduct Code, and Section 87100 et seq. and Section 1090 et seq. of the Government Code of the State of California, and certifies that it does not know of any facts which constitutes a violation of said provisions and agrees that it will immediately notify the Commission or the City if it becomes aware of any such fact during the term of this Agreement.

**Section 16. Proprietary or Confidential Information of Commission or City.** The Trustee understands and agrees that, in the performance of the work or services under this Agreement or in contemplation thereof, the Trustee may have access to private or confidential information which may be owned or controlled by the Commission or the City and that such information may contain proprietary or confidential details, the disclosure of which to third parties may be damaging to the Commission or the City. The Trustee agrees that all information disclosed by the Commission or City to the Trustee shall be held in confidence and used only in performance of this Agreement. The Trustee shall exercise the same standard of care to protect such information as a reasonably prudent contractor would use to protect its own proprietary data.

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**FIRST SUPPLEMENTAL TRUST INDENTURE**

**By and Between**

**PUBLIC UTILITIES COMMISSION OF  
THE CITY AND COUNTY OF SAN FRANCISCO**

**[NAME OF BANK],  
as Trustee**

**Dated as of March 1, 2015**

**Relating to**

**PUBLIC UTILITIES COMMISSION OF  
THE CITY AND COUNTY OF SAN FRANCISCO  
POWER REVENUE BONDS, 2015 SERIES A (GREEN BONDS)**

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## FIRST SUPPLEMENTAL TRUST INDENTURE

This FIRST SUPPLEMENTAL TRUST INDENTURE, dated as of March 1, 2015 (this "First Supplement"), is by and between THE CITY AND COUNTY OF SAN FRANCISCO (the "City"), acting by and through its PUBLIC UTILITIES COMMISSION OF THE CITY AND COUNTY OF SAN FRANCISCO (the "SFPUC"), and [NAME OF BANK], a national banking association, which is authorized by law to accept and exercise the trust powers set forth herein, and its successors in trust and assigns (the "Trustee").

### RECITALS

WHEREAS, pursuant to Section 4.112 and Article 8B of the Charter of the City (the "Charter"), the SFPUC has exclusive charge of the construction, management, supervision, maintenance, extension, operation, use and control of all water and energy supplies and utilities of the City under the SFPUC's jurisdiction, including the Power Enterprise (the "Power Enterprise"); and

WHEREAS, pursuant to Section 9.107(6) of the Charter, the Board of Supervisors of the City (the "Board") is authorized to provide for the issuance of revenue bonds, without voter approval, issued for the purpose of the reconstruction or replacement of existing water facilities or electric power facilities under the jurisdiction of the SFPUC when authorized by resolution adopted by a three-fourths majority of all of the members of the Board; and

WHEREAS, pursuant to Section 9.107(8) of the Charter, the Board is also authorized to provide for the issuance of revenue bonds, without voter approval, issued to finance or refinance the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation; and

WHEREAS, pursuant to Section 9.107 of the Charter, the Board is authorized to provide for the issuance of revenue bonds for SFPUC purposes with the assent of a majority of the voters upon any proposition for the issuance of such revenue bonds; and

WHEREAS, pursuant to Section 9.111 of the Charter, except as otherwise expressly provided by the Charter, the City and its commissions, including the SFPUC, have the authority to incur and refund indebtedness as provided by and pursuant to the general laws of the State of California (the "State"); and

WHEREAS, the Board, by its Ordinance No. \_\_\_\_\_, passed on [DATE], 2015, established procedures for the issuance by the SFPUC of revenue bonds for its Power Enterprise and addressed certain other matters in connection therewith, including the establishment, maintenance and collection by the SFPUC and the City of rates of the Power Enterprise sufficient to pay amounts due from revenues of the Power Enterprise and to provide adequate debt service coverage as required by the Trust Indenture; and

WHEREAS, the SFPUC deems it necessary and desirable and in the public interest to issue a series of revenue bonds (the "2015 Bonds"), payable from and secured by the Revenues of the Power Enterprise, after the payment of Operating and Maintenance Expenses and Priority R&R Fund deposits, if any, under and in accordance with Section 9.107 and 9.111 of the Charter

and pursuant to the terms and conditions set forth herein, for the purpose of the reconstruction or replacement of various existing electric power and/or a combination of water and electric power facilities under the jurisdiction of the SFPUC and/or the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation; and

WHEREAS, the Trustee has the power to enter into this First Supplemental Trust Indenture and to execute the trust hereby created and has accepted the trust created hereby; and

WHEREAS, in order to provide for the authentication and delivery of the 2015 Bonds, to establish and declare the terms and conditions upon which the 2015 Bonds are to be issued and secured and to secure the payment of the principal thereof, Redemption Price, if any, and interest thereon, the SFPUC, pursuant to Resolution No. \_\_\_\_\_, adopted on December \_\_, 2014, has authorized the execution and delivery of a Master Trust Indenture (the "Master Trust Indenture") and this First Supplement; and

WHEREAS, the Board of Supervisors, by its Ordinance No. \_\_\_\_, passed on [DATE], 2015, approved the issuance of the 2015 Bonds and the execution and delivery of the Master Trust Indenture and this First Supplement; and

WHEREAS, all acts and proceedings required by law necessary to make the 2015 Bonds, when executed by the SFPUC, authenticated and delivered by the Trustee and duly issued, the valid, binding and legal limited obligations of the SFPUC, and to constitute this First Supplement a valid and binding agreement for the uses and purposes herein set forth in accordance with its terms, have been done and taken, and the execution and delivery of the First Supplement have been in all respects duly authorized;

NOW, THEREFORE, in order to secure the payment of the principal of, Redemption Price, if any, and interest on, the 2015 Bonds at any time issued and Outstanding under this First Supplement, according to their tenor, and to secure the performance and observance of all the covenants and conditions therein and herein set forth, and to declare the terms and conditions upon and subject to which the 2015 Bonds are to be issued and received, and in consideration of the premises and of the mutual covenants herein contained and of the purchase and acceptance of the 2015 Bonds by the Owners thereof, and for other valuable consideration, the receipt of which is hereby acknowledged, the SFPUC does hereby covenant and agree with the Trustee, for the benefit of the Owners from time to time of the 2015 Bonds, as follows:

## ARTICLE I FIRST SUPPLEMENT; DEFINITIONS

**Section 1.01 First Supplement.** This First Supplemental Trust Indenture (the "First Supplement") is executed and delivered in accordance with and is subject to the terms and provisions of the Master Trust Indenture.

**Section 1.02 Definitions.** Unless the context otherwise requires, all terms used and not otherwise defined herein, including the Recitals, shall have the meanings set forth in the Master Trust Indenture. In addition, unless the context otherwise requires, the following terms shall have the following meanings in this First Supplement:

**“Authorized Denominations”** means \$5,000 and any integral multiple thereof.

**“Bond Register”** means the books maintained for the registration and transfer of the 2015 Bonds.

**“Bond Registrar”** means, initially, the Trustee.

**“First Supplement”** means this First Supplemental Trust Indenture, dated as of March 1, 2015, by and between the SFPUC and the Trustee, and any amendments, modifications or supplements hereto.

**“Interest Payment Date”** means the date or dates specified herein.

**“Master Trust Indenture”** means the Master Trust Indenture by and between the SFPUC and the Trustee, dated as of the date hereof, and any amendments, modifications or supplements thereto.

**“Nominee”** means the nominee of the Securities Depository, which may be the Securities Depository, as determined from time to time pursuant hereto.

**“Record Date”** means the fifteenth day of the calendar month before each Interest Payment Date.

**“2015 Bond Fund”** means the SFPUC’s “Power Revenue Bonds, 2015 Series A Bond Fund” established pursuant to Section 4.02.

**“2015 Bonds”** means the Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A (Green Bonds) issued pursuant to this First Supplement.

**“2015 Project Fund”** means the SFPUC’s “Power Revenue Bonds, 2015 Series A Project Fund” established pursuant to Section 4.03.

**“2015 Project”** means the reconstruction or replacement of existing electric power and/or water and electric power facilities and the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation to be undertaken from proceeds of the 2015 Bonds pursuant to Charter Sections 9.107(6) and 9.107(8).

**Section 1.03 Requirements of the Master Trust Indenture.** Upon the issuance and delivery of the 2015 Bonds, the SFPUC will be in compliance with the requirements set forth in Article IV of the Master Trust Indenture with respect to issuing additional Bonds.

## **ARTICLE II AUTHORIZATION AND TERMS OF THE 2015 BONDS**

**Section 2.01 Authorization of the 2015 Bonds.** There is hereby created a Series of Bonds issued pursuant to the Charter and under the Master Trust Indenture which Bonds will be

designated as "Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A (Green Bonds)" (the "2015 Bonds"). The 2015 Bonds shall be issued in one or more series in the aggregate principal amount of \$[AMOUNT].

**Section 2.02 Authentication of the 2015 Bonds.** The 2015 Bonds shall be issued as hereinafter provided. The Bond Registrar shall authenticate and deliver the 2015 Bonds upon receipt of all of the following:

(a) An opinion of Bond Counsel acceptable to the SFPUC and the Trustee, addressed to the SFPUC and the Trustee, to the effect that the 2015 Bonds to be issued are legal, valid and binding obligations of the SFPUC; and

(b) A certified copy of each of the Master Trust Indenture and this First Supplement.

**Section 2.03 Terms of the 2015 Bonds.**

(a) General. The 2015 Bonds shall be dated the date of delivery, shall mature on the dates and in the principal amounts, and bear interest, payable on \_\_\_\_ 1 and \_\_\_\_ 1 of each year commencing on \_\_\_\_ 1, 20\_\_, at the rates as follows:

Maturity Date (____ 1)	Principal Amount	Interest Rate
------------------------	------------------	---------------

Interest shall be computed on the basis of a 360-day year consisting of twelve (12) 30-day months and the actual number of days elapsed.

(b) Method of Payment. The Principal of and Redemption Premium, if any, on any 2015 Bond will be payable to the Owner thereof at the corporate office of the Trustee. Interest on the 2015 Bonds will be payable by the Trustee on each Interest Payment Date by check or draft mailed to each Owner as of the Record Date, at the most recent address shown on the Bond Register; provided, however, that payment of interest to each Owner of record who owns \$1,000,000 or more in aggregate principal amount of 2015 Bonds may be made to such Owner by wire transfer to such wire address within the United States as that Owner may request in writing prior to the Record Date.

**Section 2.04 Denominations; Medium of Payment.** The 2015 Bonds shall be issued in fully registered form in Authorized Denominations. The 2015 Bonds shall be payable with respect to interest, Principal and Redemption Premium, if any, in any coin or currency of the United States of America which, at the time of payment, is legal tender for the payment of public

and private debts. The 2015 Bonds shall bear interest until the principal sum thereof has been paid; provided, however, that if at the maturity date of the 2015 Bonds, funds are available for the payment thereof in full in accordance with the terms of Article X of the Master Trust Indenture, such 2015 Bonds shall then cease to bear interest.

**Section 2.05 Bond Registrar; Bond Registration Books.** The Trustee shall be the initial Bond Registrar for the 2015 Bonds. While any of the 2015 Bonds issued hereunder are Outstanding, the Bond Registrar shall keep and maintain the Bond Register. The Bond Registrar shall make the Bond Register available to the SFPUC for its inspection during normal business hours. The Trustee shall pay Principal of and interest on the 2015 Bonds only to or upon the order of the respective Owners, as shown in the Bond Register, or their respective attorneys, duly authorized in writing, and all such payments shall be valid and effective to fully satisfy and discharge the obligations hereunder with respect to the payment of Principal of and interest on the 2015 Bonds to the extent of the sum or sums so paid.

**Section 2.06 Book-Entry System.**

(a) General. The 2015 Bonds shall be initially issued in book-entry only form. Upon initial issuance, the ownership of the 2015 Bonds shall be registered in the Bond Register in the name of the Nominee of the Securities Depository.

No person other than a Owner, as shown in the Bond Register, shall receive a 2015 Bond evidencing the obligation to make payments of Principal and interest pursuant to this First Supplement. Upon delivery by the Securities Depository to the Bond Registrar and the SFPUC of written notice to the effect that the Securities Depository has determined to substitute a new nominee in place of the Nominee, and subject to the provisions herein with respect to the Record Date, the word Nominee in this First Supplement shall refer to such new nominee of the Securities Depository.

(b) Transfers Outside Book-Entry System. In the event (i) the Securities Depository determines not to continue to act as securities depository for the 2015 Bonds, or (ii) the SFPUC determines that the Securities Depository shall no longer so act and delivers a written certificate to the Bond Registrar to that effect, then the SFPUC will discontinue the book-entry system with respect to such 2015 Bonds with the Securities Depository. If the SFPUC determines to replace the Securities Depository with another qualified securities depository, the SFPUC shall prepare or direct the preparation of a new, single, separate, fully registered 2015 Bond for each maturity of the 2015 Bonds, registered in the name of such successor or substitute qualified securities depository or its nominee, or make such other arrangement acceptable to the SFPUC and the Securities Depository as are not inconsistent with the terms of this First Supplement. If the SFPUC fails to identify another qualified securities depository to replace the Securities Depository, then the 2015 Bonds shall no longer be restricted to being registered in the Bond Register in the name of the Nominee, but shall be registered in whatever name or names the Participants transferring or exchanging 2015 Bonds shall designate, in accordance with the provisions of Section 2.05.

**Section 2.07 Form of 2015 Bonds.** The 2015 Bonds shall be issued in substantially the form set forth in Appendix A hereto.

**Section 2.08 Additional Terms of 2015 Bonds.** CUSIP identification numbers shall be printed on the 2015 Bonds, but such numbers shall not be deemed to be a part of the 2015 Bonds or a part of the contract evidenced thereby and no liability shall attach to the SFPUC or its officers, employees or agents because or on account of such CUSIP identification numbers.

**ARTICLE III  
REDEMPTION PROVISIONS**

**Section 3.01 Optional Redemption.** The 2015 Bonds maturing on and after \_\_\_\_ 1, 20\_\_ are subject to redemption prior to their respective stated maturity dates, at the option of the SFPUC, from any source of available funds (other than Mandatory Sinking Fund Payments) as a whole or in part, in Authorized Denominations, on any date on or after \_\_\_\_ 1, 20\_\_, at a redemption price equal to 100% of the principal amount of the 2015 Bonds called for redemption, together with accrued interest to the date fixed for redemption..

**Section 3.02 Mandatory Sinking Fund Redemption.** The dates and amounts of the Mandatory Sinking Fund Payments for the 2015 Bonds are as follows:

\$[AMOUNT] 2015 Bonds (20\_\_ Term Bonds)

Mandatory Sinking Fund Redemption Date (____ 1)	Mandatory Sinking Fund Payment
---	-----------------------------------

\$[AMOUNT] 2015 Bonds (20\_\_ Term Bonds)

Mandatory Sinking Fund Redemption Date (____ 1)	Mandatory Sinking Fund Payment
---	-----------------------------------

**ARTICLE IV**  
**APPLICATION OF PROCEEDS OF 2015 BONDS;**  
**FUNDS AND ACCOUNTS**

**Section 4.01 Application of the Proceeds of the 2015 Bonds.** The proceeds of the sale of the 2015 Bonds shall be deposited and applied as follows:

2015 Project Fund	\$ _____
Common Reserve Fund	\$ _____

**Section 4.02 Establishment and Application of 2015 Bond Fund.** There is hereby established a special fund of the SFPUC to be known as the "Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A Bond Fund" (the "2015 Bond Fund") to be held in trust by the Trustee. From Revenues, the Treasurer shall transfer to the Trustee funds for deposit into the 2015 Bond Fund in the amounts and at the times necessary to pay the Principal of, premium, if any, and interest on the 2015 Bonds as the same shall become due and payable on each Interest Payment Date, date fixed for redemption or maturity date. On each Interest Payment Date, date fixed for redemption or maturity date, the Trustee shall apply moneys in the 2015 Bond Fund to pay the Principal of, premium, if any, and interest due on the 2015 Bonds on such date. The 2015 Bond Fund and the amounts on deposit therein shall be subject to the pledge of Section 5.2 of the Master Trust Indenture for the benefit of the Owners of the 2015 Bonds.

**Section 4.03 Establishment and Application of 2015 Project Fund.** There is hereby created a special fund of the SFPUC to be known as the "Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A Project Fund" (the "2015 Project Fund") to be held by the SFPUC. All amounts on deposit in the 2015 Project Fund, if any, shall be applied, first, to pay the costs of issuance of the 2015 Bonds, and second, to pay costs of the 2015 Project. The 2015 Project Fund and the amounts on deposit therein, if any, shall be subject to the pledge, lien and charge of Section 5.2 of the Master Trust Indenture for the benefit of the Owners of the 2015 Bonds.

**Section 4.04 Common Reserve Series.** The 2015 Bonds shall be a Common Reserve Series as provided in the Master Trust Indenture.

**ARTICLE V**  
**MISCELLANEOUS**

**Section 5.01 2015 Bonds Subject to the Master Trust Indenture.** Except as expressly provided in this First Supplement, every term and condition contained in the Master Trust Indenture shall apply to this First Supplement and to the 2015 Bonds with the same force and effect as if it were herein set forth at length, with such omissions, variations and modifications thereof as may be appropriate to make the same conform to this First Supplement.

**Section 5.02 Severability of Invalid Provisions.** If any one or more of the provisions contained in this First Supplement or in the 2015 Bonds shall for any reason be held to be invalid, illegal or unenforceable in any respect, then such provision or provisions shall be deemed severable from the remaining provisions contained in this First Supplement, such invalidity, illegality or unenforceability shall not affect any other provision of this First Supplement, and this First Supplement shall be construed as if such invalid or illegal or unenforceable provision had never been contained herein.

**Section 5.03 First Supplement as Contract.** In consideration of the acceptance of the 2015 Bonds by the Owners thereof, the provisions of this First Supplement shall be deemed to be and shall constitute a contract between the SFPUC and the Owners of the 2015 Bonds to secure the full and final payment of the Principal of, and interest on, the 2015 Bonds, subject to the conditions, covenants and terms contained herein and in the Master Trust Indenture.

**Section 5.04 No Priority R&R Fund Deposits.** The SFPUC has determined that, because proceeds of the 2015 Bonds will be used to finance the reconstruction and replacement of existing facilities, upon the issuance of the 2015 Bonds no Priority R&R Fund Deposits are required.

[Signature page follows.]



IN WITNESS WHEREOF, the SFPUC and the Trustee have caused this Trust Indenture to be executed on their behalf by their duly authorized representatives, all as of the day and year first written above.

**PUBLIC UTILITIES COMMISSION OF THE  
CITY AND COUNTY OF SAN FRANCISCO**

By: \_\_\_\_\_  
General Manager

Approved as to Form:

DENNIS J. HERRERA  
City Attorney of the  
City and County of San Francisco

By: \_\_\_\_\_  
Deputy City Attorney

**[TRUSTEE]**

By: \_\_\_\_\_  
Authorized Officer

APPENDIX A

FORM OF 2015 BOND

PUBLIC UTILITIES COMMISSION OF  
THE CITY AND COUNTY OF SAN FRANCISCO  
POWER REVENUE BONDS, 2015 SERIES A (GREEN BONDS)

<u>Principal Amount</u>	<u>Maturity Date</u>	<u>Interest Rate</u>	<u>CUSIP No.</u>
\$		%	

REGISTERED OWNER:

The PUBLIC UTILITY COMMISSION OF THE CITY AND COUNTY OF SAN FRANCISCO (the "SFPUC"), a department of the City and County of San Francisco (the "City") duly organized and existing under the Charter of the City, for value received, hereby promises to pay to the order of the Registered Owner shown above on the Maturity Date shown above, upon presentation and surrender hereof, the Principal Amount shown above and to pay interest at the interest rate shown above on the balance of said Principal Amount from time to time remaining unpaid. This Bond is one of the SFPUC's Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A (Green Bonds) (the "Bonds"). The Bonds are issued pursuant to the Master Trust Indenture, dated as of March 1, 2015 (the "Master Trust Indenture"), by and between the SFPUC and [TRUSTEE], as Trustee, as amended and supplemented, including as supplemented by the First Supplemental Trust Indenture, dated as of March 1, 2015 (the "First Supplemental Trust Indenture" and together with the Master Trust Indenture, the "Trust Indenture"), for the purposes of financing or refinancing capital improvements of the SFPUC, and paying certain expenses related to the issuance of the Bonds. This Bond and the rights of the Owner hereof are in all respects subject to and governed by the Trust Indenture.

The principal of, premium, if any, and interest on the Bonds is payable solely from amounts on deposit in a separate account in a special fund of the SFPUC known as the Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A Bond Fund (the "2015 Bond Fund") and other funds and accounts established for the benefit of the Bonds as set forth in the First Supplemental Trust Indenture. The 2015 Bond Fund is established by the First Supplemental Trust Indenture. The SFPUC has pledged, obligated and bound itself irrevocably to set aside and to pay into the 2015 Bond Fund the fixed amount of Revenues (as defined in the Master Trust Indenture), sufficient in time and amount to pay principal of, premium, if any, and interest on all the Bonds from time to time Outstanding, as the same shall respectively become due and payable pursuant to the terms of the Trust Indenture.

The 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 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 Trust Indenture) shall be liable for the payment on the 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 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 Bonds. 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 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 Bonds are equally and ratably secured by a pledge of Revenues, after payment of Operation and Maintenance Expenses and any Priority R&R Fund Deposits. The SFPUC may incur additional indebtedness secured by a pledge of Revenues on an equal and ratable (parity) basis with the Bonds subject to the terms of the Master Trust Indenture.

All terms used in this Bond and not otherwise defined herein shall have the respective meanings assigned thereto in the Trust Indenture.

Interest on this Bond will be payable on each \_\_\_\_\_ and \_\_\_\_\_ and on the maturity date specified above on the principal amount specified above.

Interest on this Bond shall be payable to the Owner as of the close of business on the applicable Record Date by check or draft drawn upon and mailed by the Trustee to such Registered Owner at the address shown on the registration books maintained by the Bond Registrar (the "Bond Register"); provided, however, that, if requested in writing to the Trustee by a Registered Owner of not less than \$1,000,000 in principal amount of Bonds prior to the applicable Record Date, interest shall be payable by wire transfer to such wire address within the United States as the Registered Owner shall specify. The principal of and redemption premium, if any, on this Bond shall be payable only upon presentation and surrender of this Bond at the corporate office of the Trustee. Principal of, and redemption premium, if any, and interest on, this Bond are payable in lawful money of the United States of America, which, at the respective date of payment thereof, is legal tender for the payment of public and private debts.

Interest on this Bond shall be computed on the basis of a 360-day year consisting of twelve (12) 30-day months for the actual number of days elapsed.

The Bond Registrar shall be the registrar for the Bonds. While any of the Bonds are Outstanding, the Bond Registrar shall, on behalf of the SFPUC, keep and maintain the Bond Register (which shall be kept at the corporate office of the Bond Registrar).

## **REDEMPTION**

This Bond shall be subject to optional redemption and mandatory sinking fund redemption prior to maturity, in whole or in part, at the times, in the amounts and at the prices determined pursuant to the First Supplemental Trust Indenture.

When Bonds (or portions thereof) are to be redeemed, the SFPUC shall give or cause to be given notice of the redemption of such Bonds to the Trustee no later than 45 days prior to the date fixed for redemption or such shorter time as may be acceptable to the Trustee. In the case of an optional redemption, the notice may state that such redemption is a Conditional Redemption, and such notice and optional redemption shall be of no effect if such money is not so deposited or if the notice is rescinded as described in the Master Trust Indenture. The Trustee, at the expense of the SFPUC, shall send notice of any redemption, identifying the Bonds to be redeemed, the date fixed for redemption and the method and place of payment and the information required by the Master Trust Indenture, by first class mail to each Owner of a Bond called for redemption to the Owner's address set forth on the Bond Register. Such notice shall be sent by the Trustee by first class mail between 30 and 60 days prior to the scheduled date fixed for redemption. With respect to Book-Entry Bonds, if the Trustee sends notice of redemption to the Securities Depository pursuant to the Letter of Representations, the Trustee shall not be required to give the notice set forth in the immediately preceding sentence. If notice is given as stated in this paragraph, failure of any Owner to receive such notice, or any defect in the notice, shall not affect the redemption or the validity of the proceedings for the redemption of the Bonds.

#### **MISCELLANEOUS**

No recourse shall be had for the payment of the principal of, premium, if any, or interest on, any of the Bonds or for any claim based thereon or under the Master Trust Indenture, against any past, present or future Commission member or any officer, employee or agent of the SFPUC, under any rule of law or equity, statute or constitution or by the enforcement of any assessment or penalty or otherwise, and all such liability of any such Commission member or officer, employee or agent as such is hereby expressly waived and released as a condition of, and in consideration for, the acceptance of this Bond.

The Owner of this Bond shall have no right to enforce the provisions of the Master Trust Indenture or to institute action to enforce the covenants therein, or to take any action with respect to any Event of Default under the Master Trust Indenture, or to institute, appear in or defend any suit or other proceedings with respect thereto, except as provided in the Master Trust Indenture.

The SFPUC and the Trustee may treat the person in whose name this Bond is registered as the Owner hereof for the purpose of receiving payment as herein provided and for all other purposes, whether or not this Bond be overdue, and neither the SFPUC nor the Trustee shall be affected by notice to the contrary.

The Master Trust Indenture prescribes the manner in which this Bond may be discharged, including a provision that the Bonds shall be deemed to be paid if cash and/or Government Securities maturing as to principal and interest in such amounts and at such times as will insure the availability of sufficient moneys to pay the principal of, premium, if any, and interest on the Bonds shall have been deposited with the Trustee, after which the Bonds shall no longer be secured by or entitled to the benefits of the Master Trust Indenture, except for the purposes of registration and exchange of Bonds and of payment from such source.

This Bond is transferable by the Owner hereof in person or by his or her attorney duly authorized in writing at the corporate office of the Bond Registrar but only in the manner, subject to the limitations of and upon payment of the charges provided in the Master Trust Indenture and upon surrender and cancellation of this Bond. Upon such transfer, a new registered Bond or Bonds in Authorized Denominations in the same aggregate principal amount will be issued to the transferee in exchange therefor.

Reference is hereby made to the Master Trust Indenture, a copy of which is on file with both the Trustee and the SFPUC, for the provisions, among others, with respect to the nature and extent of the rights, duties and obligations of the SFPUC, the Trustee and the Owners of any Bonds, the terms upon which the Bonds are issued and secured and other matters, to all of which the Owner of this Bond assents by the acceptance of this Bond.

Modifications or alterations of the Master Trust Indenture or the First Supplemental Trust Indenture, or of any supplements thereto, may be made only to the extent and in the circumstances permitted by the Master Trust Indenture and the First Supplemental Trust Indenture.

It is hereby certified and declared that all acts, conditions and things required to exist, to have happened and to have been performed precedent to and in the execution of the Master Trust Indenture, the First Supplemental Trust Indenture and the issuance of this Bond and the series of Bonds of which this is one do exist, have happened and have been performed in due time, form and manner as required by law, and that this Bond, together with all other indebtedness of the SFPUC, does not exceed any limit prescribed by the Constitution and laws of the State of California and is not in excess of the amount of Bonds permitted to be issued under the Master Trust Indenture.

This Bond shall not be valid or become obligatory for any purpose or be entitled to any security or benefit under the Master Trust Indenture or the First Supplemental Trust Indenture unless and until the certificate of authentication hereon shall have been duly executed by the manual signature of an authorized officer of the Bond Registrar.

IN WITNESS WHEREOF, PUBLIC UTILITIES COMMISSION OF THE CITY AND COUNTY OF SAN FRANCISCO has caused this Bond to be executed in its name by the facsimile signature of the President of its Commission and attested by the facsimile signature of the Secretary of its Commission as of the date set forth above.

**PUBLIC UTILITIES COMMISSION OF  
THE CITY AND COUNTY OF SAN  
FRANCISCO**

By: \_\_\_\_\_  
President

ATTEST:

By: \_\_\_\_\_  
Secretary

**CERTIFICATE OF AUTHENTICATION**

This Bond is one of the fully registered Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A (Green Bonds), described in the within mentioned First Supplemental Trust Indenture.

Date of Authentication: \_\_\_\_\_

**Bond Registrar**

By: \_\_\_\_\_  
Authorized Signatory

**ASSIGNMENT**

The following abbreviations, when used in the inscription on the face of the within mentioned Bonds and in the assignment below, shall be construed as though they were written out in full according to applicable laws or regulations.

TEN COM: as tenants in common

TEN ENT: as tenants by the entireties

JT TEN: as joint tenants with right of survivorship and not as tenants in common

UNIF GIFT MIN ACT \_\_\_\_\_ Custodian \_\_\_\_\_  
(Cust) (Minor)

Additional abbreviations may also be used though not in the above list.

FOR VALUE RECEIVED, the undersigned do(es) hereby sell, assign and transfer unto \_\_\_\_\_ the within mentioned registered Bond and hereby irrevocably constitute(s) and appoint(s) \_\_\_\_\_ attorney, to transfer the same on the books of the Bond Registrar with full power of substitution in the premises.

Dated: \_\_\_\_\_

Note: The signature(s) to this Assignment must correspond with the name(s) as written on the face of the within Bond in every particular, without alteration or enlargement or any change whatsoever.

SIGNATURE GUARANTEED:

NOTICE: Signature(s) must be guaranteed by a member firm of the New York Stock Exchange or a commercial bank or trust company.





§ \_\_\_\_\_  
**PUBLIC UTILITIES COMMISSION OF THE  
CITY AND COUNTY OF SAN FRANCISCO  
POWER REVENUE BONDS  
2015 SERIES A**

**BOND PURCHASE CONTRACT**

\_\_\_\_\_, 2015

Public Utilities Commission of the  
City and County of San Francisco  
525 Golden Gate Avenue, 13<sup>th</sup> Floor  
San Francisco, CA 94102

Ladies and Gentlemen:

Wells Fargo Bank, N.A. (the “*Underwriter*”), offers to enter into this Bond Purchase Contract (this “*Purchase Contract*”) with the Public Utilities Commission of the City and County of San Francisco (the “*Commission*”), which will be binding upon the Commission and the Underwriter upon acceptance hereof by the Commission. This offer is made subject to the acceptance by the Commission by its execution of this Purchase Contract and its delivery to the Underwriter on or before 11:59 p.m., California time, on the date hereof and, if not so accepted, will be subject to withdrawal by the Underwriter upon written notice delivered to the Commission at any time prior to the acceptance of this Purchase Contract by the Commission. If the Underwriter withdraws this offer, or the Underwriter’s obligation to purchase the Bonds (as hereinafter defined) is otherwise terminated pursuant to Section 8(d) hereof, then and in such case, the Commission shall be without any further obligation to the Underwriter, including the payment of any costs set forth under Section 10(a) hereof, and the Commission shall be free to sell the Bonds to any other party.

The Underwriter represents that it has full authority to take such action as it may deem advisable in respect of all matters pertaining to this Purchase Contract and that the Underwriter has been duly authorized to execute this Purchase Contract.

Capitalized terms not otherwise defined herein shall have the meanings set forth in the Trust Indenture dated as of \_\_\_\_\_, 2015 (the “*Master Indenture*”), between the Commission and \_\_\_\_\_, as trustee (the “*Trustee*”), as supplemented by a First Supplemental Trust Indenture, dated as of \_\_\_\_\_ 1, 2015 (the “*First Supplemental Indenture*”), between the Commission and the Trustee (the Master Indenture, as supplemented, being herein referred to as the “*Indenture*”).

**Section 1. Purchase and Sale.** Upon the terms and conditions and upon the basis of the representations set forth herein, the Underwriter agrees to purchase from the Commission, and the Commission hereby agrees to sell and deliver to, or for the account of, the Underwriter,

all (but not less than all) of the \$\_\_\_\_\_ aggregate principal amount of Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A (the "Bonds").

The purchase price for the Bonds shall be \$\_\_\_\_\_ (comprised of the principal amount of the Bonds, plus a [net] original issue premium on the Bonds of \_\_\_\_\_, less an Underwriter's discount in the amount of \_\_\_\_\_).

The Bonds shall be dated their date of delivery and shall have the maturities in principal amounts and bear interest at the rates per annum and have the yields all as set forth on Schedule I attached hereto. The Bonds shall be subject to optional and mandatory sinking fund redemption prior to maturity as shown on Schedule I. The Bonds shall be substantially in the form described in, and shall be issued and secured under and pursuant to, the Indenture. The Bonds shall be as otherwise described in the Official Statement (as hereinafter defined).

**Section 2. Authorization for the Bonds; Purpose of Issue.** The Commission has the authority to issue the Bonds under Sections 9.107(6) and 9.107(8) of the Charter (the "Charter") of the City and County of San Francisco (the "City"), and pursuant to Ordinance No. \_\_\_\_\_, passed by the Board of Supervisors of the City on \_\_\_\_\_, 2014 and signed by the Mayor of the City on \_\_\_\_\_, 2014 and Ordinance No. \_\_\_\_\_, passed by the Board of Supervisors of the City on \_\_\_\_\_, 2014 and signed by the Mayor on \_\_\_\_\_, 2014 (together, the "Ordinances"), and Resolution No. \_\_\_\_\_, adopted by the Commission on \_\_\_\_\_, 2014 and Resolution No. \_\_\_\_\_ of the Commission adopted on \_\_\_\_\_, 2014 (the "Commission Resolutions").

The Bonds are being issued to (i) finance various capital projects consisting of the reconstruction or replacement of existing water and/or electric power facilities of the Power Enterprise and of the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation benefiting the Power Enterprise, (ii) pay capitalized interest on the Bonds, (iii) fund a debt service reserve account for the Bonds, and (iv) pay costs of issuance of the Bonds.

**Section 3. Public Offering.** It shall be a condition to the obligations of the Underwriter to purchase, accept delivery of and pay for the Bonds that the entire principal amount of the Bonds be sold and delivered by the Commission to the Underwriter. On or prior to the Closing Date (as hereinafter defined), the Underwriter will provide the Commission with information regarding the reoffering prices and yields on the Bonds, in substantially the form attached hereto as Appendix B, for purposes of determining the yield on the Bonds under Section 148 of the Internal Revenue Code of 1986, as amended. The Underwriter agrees to make a bona fide public offering of all the Bonds, at prices not in excess of the prices or yields as set forth in Schedule I hereto. The Underwriter will provide, consistent with the requirements of the Municipal Securities Rulemaking Board (the "MSRB") Rule G-32, for the delivery of a copy of the Official Statement to each customer who purchases a Bond during the Underwriting Period (as hereinafter defined). The Underwriter further agrees that it will comply with applicable laws and regulations, including without limitation Rule 15c2-12 and MSRB Rule G-17, in connection with the offering and sale of the Bonds. Subsequent to the initial public offering, the public

offering prices of the Bonds may change as determined by the Underwriter to be necessary in connection with the marketing of the Bonds.

**Section 4. Delivery of Official Statement.** Prior to the date hereof, the Commission has provided to the Underwriter for review a form of the preliminary official statement relating to the Bonds dated \_\_\_\_\_, 2015 (including the cover page and appendices thereto (the "*Preliminary Official Statement*"), which, as of its date, a representative of the Commission on behalf of the Commission deemed final for purposes of Rule 15c2-12 promulgated under the Securities Exchange Act of 1934 ("*Rule 15c2-12*"), except for certain information permitted to be omitted therefrom by Rule 15c2-12. By its acceptance of this offer, the Commission hereby ratifies and consents to the use and distribution by the Underwriter of the Preliminary Official Statement in connection with the public offering and sale of the Bonds, and the Commission has authorized the delivery of a final official statement relating to the Bonds dated the date hereof (both in print or electronic form) which will consist of the Preliminary Official Statement and all information previously permitted to have been omitted by Rule 15c2-12.

The Commission hereby acknowledges that the Preliminary Official Statement has been made available to investors on the Internet at [www.MuniOS.com](http://www.MuniOS.com). The Commission hereby agrees to deliver or cause to be delivered to the Underwriter within seven (7) Business Days of the date hereof and in sufficient time to accompany any orders or confirmations from the Underwriter that request payment from any customers, not more than one hundred (100) copies of the final official statement (including all information permitted to be omitted by Rule 15c2-12 and any amendments or supplements to such official statement as have been approved by the Commission and the Underwriter) (the "*Official Statement*") to enable the Underwriter to comply with the rules of the Securities and Exchange Commission (the "*SEC*") and the MSRB. The Commission hereby approves of the use and distribution by the Underwriter of the Official Statement in connection with the offer and sale of the Bonds. At the time of or prior to the Closing Date (as hereinafter defined), the Underwriter shall file a copy of the Official Statement with the MSRB or its designee (including the MSRB's Electronic Municipal Market Access system ("*EMMA*") or with any other repository approved from time to time by the SEC (either in addition to or in lieu of the filings referred to above).

The Commission will deliver the Continuing Disclosure Certificate substantially in the form set forth in the Preliminary Official Statement (the "*Continuing Disclosure Certificate*") on the Closing Date. The form of the Continuing Disclosure Certificate will also be set forth in the Official Statement.

**Section 5. The Closing.** At 8:00 a.m., California time, on \_\_\_\_\_, 2015 or at such other time or on such other date as the Commission and the Underwriter may agree (the "*Closing Date*"), the Commission shall deliver, or cause to be delivered to the Underwriter, through the Fast Automated Securities Transfer ("*FAST*") delivery system of The Depository Trust Company ("*DTC*"), the Bonds in book-entry eligible form, duly executed and authenticated, and registered in the name of Cede & Co., as nominee of DTC. Concurrently with the delivery of the Bonds to the Underwriter, the Commission will deliver the documents hereinafter mentioned at the offices of Orrick, Herrington & Sutcliffe LLP (together with Curls Bartling P.C., "*Co-Bond Counsel*"), in San Francisco, California, or another place to be mutually agreed upon by the Commission

and the Underwriter. The Underwriter shall accept such delivery and pay the purchase price for the Bonds set forth in Section 1 by federal funds wire transfer in immediately available funds to the order of the Trustee for the account of the Commission. This payment for and delivery of the Bonds, together with the delivery of the aforementioned documents, is herein called the "Closing." The Underwriter shall order CUSIP identification numbers and the Commission shall cause such CUSIP identification numbers to be printed on the Bonds; *provided*, that neither the failure to print such number on any Bond nor any error with respect thereto shall constitute cause for a failure or refusal by the Underwriter to accept the Bonds. The Underwriter represents that the CUSIP numbers set forth on Schedule I hereof are the correct CUSIP numbers for the Bonds. The Bonds shall be made available to the Trustee at least two (2) business days prior to the Closing.

**Section 6. Representations, Warranties, and Agreements of the Commission.** The Commission represents, warrants and agrees with the Underwriter as follows:

(a) *Due Organization, Existence and Authority.* The Commission is a duly constituted public commission of the City and County of San Francisco duly organized and validly existing pursuant to its Charter and the Constitution and laws of the State, with full authority to: (i) adopt the Commission Resolutions; (ii) execute and deliver the Master Indenture, the First Supplemental Indenture, the Continuing Disclosure Certificate and this Purchase Contract; (iii) approve the Official Statement and authorize its distribution by the Underwriter; and (iv) sell and deliver the Bonds to the Underwriter as provided herein.

(b) *Accuracy and Completeness of the Preliminary Official Statement and Official Statement.* The information with respect to the Commission, its activities and the Power Enterprise as described in the Preliminary Official Statement, as supplemented and amended through the date hereof was, and such information in the Official Statement, as of its date and at all times subsequent thereto up to and including the date of the Closing, will be, true and correct in all material respects, contains and will contain no misstatement of any material fact, and did not and will not omit any statement and information that is necessary to make the statements and information with respect to the Commission, its activities and the Power Enterprise contained therein, in the light of the circumstances under which such statements were made, not misleading in any material respect, excluding in each case any information contained in the Preliminary Official Statement and the Official Statement relating to (i) the offering prices, interest rates, selling compensation, aggregate principal amount, principal amount per maturity, delivery dates, or other terms of the Bonds depending on such matters, (ii) DTC and the book-entry only system, and (iii) information provided by the Underwriter for inclusion in the Official Statement, including without limitation information regarding the prices and yields of the Bonds and under the caption "UNDERWRITING."

(c) *Amendment to Official Statement.* If, at any time prior to the End of the Underwriting Period (as defined below), an event occurs or facts or conditions become known of which the Commission has knowledge, which in the reasonable opinion of Co-Bond Counsel, General Counsel to the Commission or the City Attorney might or would

cause the information in the Official Statement, as then supplemented or amended, to contain any untrue statement of a material fact or to omit to state a material fact necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading, the Commission will notify the Underwriter, and if in the reasonable opinion of the Underwriter and the Commission, such event, fact or condition requires the preparation and publication of a supplement or amendment to the Official Statement, the Commission will amend or supplement the Official Statement in a form and in a manner reasonably approved by the Underwriter and the Commission, provided all expenses incurred in connection with preparing an amendment or supplement to the Official Statement will be paid by the Commission. As used herein and for the purposes of the foregoing, the term "*End of the Underwriting Period*" for the Bonds shall refer to the Closing, unless the Commission shall have been notified in writing to the contrary by the Underwriter on or prior to the Closing, but in any event not later than the date twenty-five (25) days following the Closing. For the purposes of this subsection, the Commission will furnish such information as the Underwriter may from time to time reasonably request in writing prior to the End of the Underwriting Period.

(d) *No Breach or Default.* As of the time of acceptance hereof and as of the Closing Date and except as otherwise disclosed in the Official Statement, neither the execution nor the delivery by the Commission of the Indenture, the Continuing Disclosure Certificate or this Purchase Contract, the adoption of the Commission Resolutions, or the compliance by the Commission with such documents or authorizations, conflicts with or constitutes a material breach of, or default under, any applicable law or administrative regulation of the State or the United States, or any other statute or administrative rule or regulation, judgment, decree, order, license, permit, agreement or instrument to which the Commission is subject, which breach, default or conflict would have a material adverse effect on the ability of the Commission to pay the Bonds or perform its obligations under the Indenture, the Continuing Disclosure Certificate or this Purchase Contract.

(e) *No Other Bond Issues or Debt.* Between the time of acceptance hereof and the Closing Date, the Commission will not, without prior notice to the Underwriter, issue any bonds or securities or incur any other indebtedness secured by the Revenues.

(f) *No Litigation.* As of the date hereof and as of the Closing Date, and except as disclosed in the Official Statement, there is no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, regulatory agency, public board or body, pending or, to the knowledge of the Commission, threatened against the Commission: (i) affecting the existence of the Commission or the titles of its officers to their respective offices; (ii) seeking to restrain or to enjoin the sale or delivery of the Bonds or the application of the proceeds therefrom in accordance with the Indenture; (iii) in any way contesting or affecting the validity or enforceability of the Bonds, the Indenture or any action of the Commission authorizing the issuance, execution or delivery thereof; (iv) in any way contesting the completeness or accuracy of the Official Statement or any amendment or supplement thereto; or (v) contesting the powers of the Commission with respect to the Bonds or any action of the Commission authorizing the

issuance, execution or delivery thereof, nor to the knowledge of the Commission, as evidenced by the representative of the Commission signing this Purchase Contract, is there any basis therefor. As of the date hereof and as of the Closing Date, and except as disclosed in the Official Statement, there is no action, suit, proceedings, inquiry or investigation, at law or in equity, before or by any court, regulatory agency, public board or body, pending or, to the knowledge of the Commission, threatened against the Commission in which a final adverse decision would materially and adversely affect the operations of the Power Enterprise, Net Revenues or the consummation of the transactions contemplated by this Purchase Contract or contesting in any way the completeness, accuracy or fairness of the Official Statement.

(g) *Further Cooperation; Blue Sky.* The Commission will furnish such information, execute such instruments and take such other action in cooperation with the Underwriter as the Underwriter may reasonably request in order to qualify the Bonds for offer and sale under the Blue Sky or other securities laws and regulations of such states and other jurisdictions of the United States as the Underwriter may designate; *provided, however,* that the Commission will not be required to execute a special or general consent to service of process or qualify as a foreign corporation in connection with any such qualification in any jurisdiction.

(h) *Continuing Disclosure.* During the past five years, the Commission has complied in all material respects with its prior continuing disclosure undertakings under Rule 15c2-12.

**Section 7. Representations, Warranties and Agreements of the Underwriter.** The Underwriter represents, warrants and agrees with the Commission that:

(a) The Underwriter has been duly authorized to enter into this Purchase Contract.

(b) The Underwriter shall comply with the San Francisco Business Tax Ordinance and shall, if not otherwise exempt from such ordinance, provide to the Commission a Business Tax Registration Certificate on or prior to the date hereof.

(c) The Underwriter shall comply with all SEC and MSRB rules applicable to the offering, sale and delivery of the Bonds to ultimate purchasers.

(d) The Underwriter shall comply with the Commission's policy and practice that the Commission shall not pay, and the Underwriter shall not pass through to the Commission, any fees that are assessed on the Underwriter as part of the Governmental Accounting Standards Board fee, as well as the MSRB Underwriting and Transaction Assessment, the SIFMA Municipal Assessment or any other industry related fees that are required to be paid solely by the Underwriter.

**Section 8. Closing Conditions.** The Underwriter has entered into this Purchase Contract in reliance upon the representations, warranties and agreements herein and the performance by the Commission of its obligations hereunder, both as of the date hereof and as of

the Closing Date. The obligations of the Underwriter under this Purchase Contract are and shall be subject to the following conditions:

(a) *Bring-Down Representation.* The representations and warranties of the Commission contained herein shall be true, accurate and correct in all material respects at the date hereof, and on the Closing Date, as if made on the Closing Date.

(b) *Executed Documents and Performance Thereunder.* At the time of the Closing: (i) the Indenture, this Purchase Contract and the Official Statement shall be in full force and effect, and shall not have been amended, modified or supplemented except with the consent of the Underwriter (which consent will not be unreasonably withheld); and (ii) the Commission shall perform or have performed all of its obligations required under or specified in this Purchase Contract, the Official Statement and the Indenture to be performed prior to the Closing.

(c) *No Default.* At the time of the Closing, no default shall have occurred or be existing under the Indenture or this Purchase Contract.

(d) *Termination Events.* The Underwriter may terminate this Purchase Contract by notification in writing to the Commission, but only after consultation with the Commission, if, at any time on or prior to the Closing, any of the following occurs and, as a result of the occurrence of such an event, the marketability of the Bonds or the market price thereof, in the reasonable opinion of the Underwriter, after consultation with the Commission, would be materially adversely affected *provided, however,* that, in the event the Commission and the Underwriter disagree as to the effect of the occurrence of such event on the ability of the Underwriter to market the Bonds, this Purchase Contract may only be terminated by the Underwriter after the Underwriter and the Commission shall have negotiated in good faith to determine if there is an alternate time, place and manner which would permit the Underwriter to successfully market the Bonds:

(i) any event shall occur which makes untrue any statement or results in an omission to state a material fact necessary to make the statements in the Official Statement, in the light of the circumstances under which they were made, not misleading and the Commission fails to amend or supplement the Official Statement pursuant to Section 6(c) hereof; or

(ii) an amendment to the Constitution of the United States or the Constitution of the State or legislation in or by the Congress of the United States or the legislature of the State, or the amendment of legislation pending as of the date of this Purchase Contract in the Congress of the United States, or the favorable reporting for passage of legislation to either House of the Congress of the United States by a Committee of such House to which such legislation has been referred for consideration, or any decision of any federal or State court or any ruling or regulation (final, temporary or proposed) or official statement on behalf of the United States Treasury Department, the Internal Revenue Service or other federal or State authority or the occurrence of any other comparable legislative or regulatory event affecting the federal or State tax status of the

interest on the Bonds or bonds or obligations of the general character of the Bonds; provided, that the occurrence of any such event shall not constitute a termination event hereunder if the prospect of such constitutional, legislative, regulatory or judicial action or enactment shall have been publicly known on the date hereof; or

(iii) any legislation, ordinance, rule or regulation shall be introduced in, or be enacted by any governmental body, department or agency of the State, or a decision by any court of competent jurisdiction within the State shall be rendered ; or

(iv) a stop order, ruling, regulation or official statement by, or on behalf of, the Securities and Exchange Commission or any other governmental agency having jurisdiction of the subject matter shall be issued or made to the effect that the issuance, offering or sale of obligations of the general character of the Bonds, or the issuance, offering or sale of the Bonds, including all underlying obligations, as contemplated hereby or by the Official Statement, is in violation or would be in violation of any provision of the federal securities laws, including the Securities Act of 1933, as amended and as then in effect, or that the Indenture need be qualified under the Trust Indenture Act of 1939, as amended and as then in effect; or

(v) legislation shall be enacted by the Congress of the United States, or a decision by a court of the United States shall be rendered, to the effect that obligations of the general character of the Bonds, or the Bonds, are not exempt from registration under the Securities Act of 1933, as amended and as then in effect, or the Securities Exchange Act of 1934, as amended and as then in effect, or that the Indenture is not exempt from qualification under the Trust Indenture Act of 1939, as amended and as then in effect; or

(vi) additional material restrictions not in force as of the date hereof shall have been imposed upon trading in the United States in securities generally by any governmental authority or by any national securities exchange; or

(vii) a general banking moratorium shall have been declared by federal, State or State of New York authorities or a disruption in securities settlement, payment or clearance services has occurred; or

(viii) the ratings on the Bonds shall have been downgraded or withdrawn subsequent to the date of this Purchase Contract by one of the rating agencies rating the Bonds; or

(ix) there shall have occurred any outbreak or escalation of hostilities, declaration by the United States of a national or international emergency or war or other calamity or crisis.



The termination of this Purchase Contract pursuant to this Section 8(d) by the Underwriter with respect to the Bonds shall not prohibit the Commission from selling such Bonds to any other underwriter.

(e) *Closing Documents.* At or prior to the Closing, the Underwriter shall receive with respect to the Bonds (unless the context otherwise indicates) the following documents, in each case satisfactory in form and substance to the Underwriter:

(1) *Approving Authorizations.* Certified copies of the Ordinances and Commission Resolutions.

(2) *Bond Documents.* Executed originals of the Master Indenture, the First Supplemental Indenture, the Continuing Disclosure Certificate and this Purchase Contract.

(3) *Final Opinion.* An approving opinion or opinions of Co-Bond Counsel, dated the Closing Date, and substantially in the form attached to the Official Statement, and a letter of such counsel addressed to the Underwriter to the effect that such opinion may be relied upon by the Underwriter to the same extent as if it had been addressed to them.

(4) *Supplemental Opinion.* A supplemental opinion or opinions of Co-Bond Counsel addressed to the Commission and the Underwriter, dated the Closing Date, to the following effect:

(i) The statements contained in the Official Statement under the captions "THE 2015 SERIES A BONDS," "SECURITY FOR THE BONDS," "TAX MATTERS," Appendix A—"SUMMARY OF CERTAIN PROVISIONS OF THE INDENTURE," and Appendix D—"FORM OF OPINION OF CO-BOND COUNSEL," insofar as such statements purport to summarize certain provisions of the Bonds, the Indenture, and the opinion of Co-Bond Counsel with respect to the exclusion from gross income of interest on the Bonds for federal income tax purposes are accurate in all material respects.

(ii) The Bonds are not subject to the registration requirements of the Securities Act of 1933, as amended, and the Indenture is exempt from qualification under the Trust Indenture Act of 1939, as amended.

(iii) This Purchase Contract, the Master Indenture, the First Supplemental Indenture and the Continuing Disclosure Certificate have each been duly authorized, executed and delivered by the Commission and constitute the valid, legal and binding agreements of the Commission, each enforceable in accordance with its respective terms, except as enforcement thereof may be limited by bankruptcy, insolvency, reorganization, arrangement, fraudulent conveyance, moratorium or other similar laws affecting enforcement of creditors' rights, by the application

of equitable principles if equitable remedies are sought and limitations on the enforcement of legal remedies against public agencies in the State.

(5) *Disclosure Counsel Opinion as to Official Statement.* An opinion of Orrick, Herrington & Sutcliffe LLP, as Disclosure Counsel to the Commission, addressed to the Commission and the Underwriter, dated the Closing Date, to the effect that, on the date of the Official Statement and as of the Closing Date, while such counsel is not passing upon, and does not assume any responsibility for, the accuracy, completeness or fairness of any of the statements contained in the Official Statement, based upon such counsel's participation in conferences during which the contents of the Official Statement were discussed, no information came to such counsel's attention which caused such counsel to believe that the Official Statement (except for the financial, statistical or economic data or forecasts, numbers, charts, tables, graphs, estimates, projections, assumptions or expressions of opinion, CUSIP numbers, any information regarding DTC and its book-entry system, any information contained in Appendices included therein (other than Appendix \_), and any information incorporated by reference into the Official Statement, as to which no opinion or view need be expressed) contained any untrue statement of a material fact or omitted to state a material fact necessary in order to make the statements made therein, in the light of the circumstances under which they were made, not misleading.

(6) *Certificate of the Commission.* A certificate of the Commission dated the Closing Date, signed on behalf of the Commission by an authorized officer of the Commission, to the effect that:

(i) The representations and warranties of the Commission contained herein are true and correct in all material respects on and as of the Closing Date as if made on the Closing Date.

(ii) No event affecting the Commission has occurred since the date of the Official Statement which has not been disclosed therein or in any supplement or amendment thereto which event should be disclosed in the Official Statement in order to make the statements therein, in the light of the circumstances under which they were made, not misleading.

(7) *Certificate of the Trustee.* A certificate of the Trustee, dated the Closing Date, to the effect that:

(i) The Trustee is a national banking association organized and existing under the laws of the United States of America and has full power and is qualified to accept and comply with the terms of the Indenture and to perform its obligations thereunder.

(ii) The Trustee has accepted the duties and obligations imposed on it by the Indenture.

(iii) No consent, approval, authorization or other action by any governmental or regulatory authority having jurisdiction over the Trustee that has not been obtained is or will be required for the consummation by the Trustee of the transactions contemplated by the Indenture to be undertaken by the Trustee.

(iv) Compliance with the terms of the Indenture will not conflict with, result in a violation or breach of, or constitute a default under, any loan agreement, indenture, bond, note, resolution or any other agreement or instrument to which the Trustee is a party or by which it is bound, or, to the best knowledge of the Trustee, after reasonable investigation, any law, rule, regulation, order or decree of any court or governmental agency or body having jurisdiction over the Trustee or any of its activities or properties (except that no representation, warranty or agreement is made by the Trustee with respect to any federal or state securities or Blue Sky laws or regulations).

(v) To the knowledge of the Trustee after due inquiry, there is no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court or governmental agency, public board or body served on or threatened against or affecting the existence of the Trustee, or in any way contesting or affecting the validity or enforceability of the Indenture or the Bonds, or contesting the powers of the Trustee or its authority to enter into and perform its obligations under the Indenture or the Bonds, wherein an unfavorable decision, ruling or finding would adversely affect the validity of the Bonds or the Indenture.

(8) *Trustee's Counsel Opinion.* An opinion of counsel to the Trustee addressed to the Commission and the Underwriter, dated the Closing Date, to the effect that:

(i) The Trustee is a national banking association with trust powers, duly organized and validly existing and in good standing under the laws of the United States of America, having the legal authority to exercise trust powers in the State.

(ii) The Trustee has full legal power and adequate corporate authority to accept the duties and obligations imposed on it by the Indenture and to authenticate the Bonds and the full legal power and authority to own its properties and to carry on its business.

(iii) The Bonds have been duly authenticated by the Trustee.

(iv) No consent, approval, authorization or order of any court, regulatory authority or governmental body is required for the valid authorization, execution and delivery of the Indenture and the authentication of the Bonds or the consummation by the Trustee of the

transactions contemplated in the Indenture except such as have been obtained and except such as may be required under the state securities or Blue Sky laws in connection with the purchase and distribution of the Bonds by the Underwriter.

(v) Trustee's acceptance of its duties under the Indenture and the authentication of the Bonds by the Trustee and performance by the Trustee of its obligations thereunder will not conflict with or result in a breach of any of the terms, conditions or provisions of its Articles of Association or Bylaws or any other agreement or instrument to which the Trustee is a party or by which it is bound or any other existing law, regulation, court order or consent decree to which the Trustee is subject or constitute a default thereunder.

(vi) There is no action, suit, proceeding, inquiry or investigation, at law or in equity, before or by any court, governmental agency, public board or body, pending or threatened against the Trustee affecting the existence of the Trustee or the titles of its officers to their respective offices or seeking to prohibit, restrain or enjoin the authentication of the Bonds by the Trustee, or contesting the powers of the Trustee or its authority to perform its obligations under the Indenture or the Bonds.

(9) *Tax Certificate.* Tax Certificate of the Commission, dated the Closing Date, in form satisfactory to Co-Bond Counsel.

(10) *California Debt and Investment Advisory Commission Filings.* Copies of the Report of Proposed Debt Issuance and Report of Final Sale required to be delivered to the California Debt and Investment Advisory Commission pursuant to Section 53583 of the Government Code and Section 8855(g) of the Government Code.

(11) *Continuing Disclosure Certificate.* An executed copy of the Continuing Disclosure Certificate in substantially the form attached to the Official Statement as Appendix E.

(12) *Rating Letters for the Bonds.* Rating letters of Fitch Ratings ("*Fitch*") and Standard & Poor's Ratings Services, a Standard & Poor's Financial Services LLC business ("*S&P*"), evidencing that such rating agencies have assigned their municipal bond ratings of "\_\_\_" and "\_\_\_," respectively.

(13) *Opinion of the City Attorney.* An opinion of the City Attorney addressed to the Underwriter, dated the Closing Date, in form satisfactory to the Underwriter.

(14) *Blue Sky Memorandum.* A copy of the Blue Sky Memorandum with respect to the Bonds, prepared by Nossaman LLP, counsel to the Underwriter ("*Underwriter's Counsel*").

(15) *Opinion of the Underwriter's Counsel.* The opinion of Underwriter's Counsel, dated the Closing Date and addressed to the Underwriter, to the effect that: (a) the Bonds are exempt from registration under the Securities Act of 1933, as amended, and the Indenture is exempt from qualification under the Trust Indenture Act of 1939, as amended, and the Continuing Disclosure Certificate satisfies paragraph (b)(5) of Rule 15c2-12; and (b) without having undertaken to determine independently the accuracy, completeness or fairness of the statements contained in the Official Statement and based upon the information made available to them in the course of their participation in the preparation of the Official Statement as counsel for the Underwriter, nothing has come to their attention which would cause them to believe that the Preliminary Official Statement, as of the date of this Purchase Contract, or the Official Statement, as of the date thereof and as of the Closing Date, contained any untrue statement of a material fact or omitted to state a material fact required to be stated therein or necessary to make the statements therein, in the light of the circumstances under which they were made, not misleading; *provided* that no opinion need be expressed with respect to the financial statements and the statistical data included in the Official Statement, and Appendices A through E thereto, and information regarding DTC and its book-entry only system.

(16) *Additional Documents.* Such legal opinions, additional certificates, instruments and other documents as the Underwriter, Co-Bond Counsel or the City Attorney may reasonably deem necessary to evidence the truth and accuracy as of the time of the Closing of the representations of the Commission and the due performance or satisfaction by the Commission at or prior to such time of all agreements then to be performed and all conditions then to be satisfied by the Commission.

If the Commission shall be unable to satisfy the conditions contained in this Purchase Contract, or if the obligations of the Underwriter shall be terminated for any reason permitted by this Purchase Contract, this Purchase Contract shall terminate and the Underwriter and the Commission shall not be under further obligation hereunder, except as further set forth in Section 10 hereof.

**Section 9. Good Faith Deposit.** To secure the Commission from any loss resulting from the failure of the Underwriter to accept delivery of and pay the purchase price for the Bonds pursuant to the terms of this Purchase Contract, the Underwriter agrees to deliver to or to the order of the Commission, concurrently with the execution and delivery of this Purchase Contract, either an official bank check (which may be deposited by the Commission upon receipt) or a federal funds wire transfer in the amount of \$\_\_\_\_\_ (the "*Good Faith Deposit*"). At the Closing, the Good Faith Deposit will be applied towards and deducted from the aggregate net purchase price for the Bonds as provided in Section 1 of this Purchase Contract. If the Underwriter fails to pay the purchase price in full upon tender of the Bonds

(other than for a reason permitted under Section 8 hereof), the Commission may retain such Good Faith Deposit as and for liquidated damages for such failure by the Underwriter. In such circumstance, the Underwriter will have no right to recover the Good Faith Deposit or to any allowance or credit therefor. Retaining the Good Faith Deposit shall constitute the Commission's sole and exclusive remedy and full liquidated damages for the Underwriter's failure (other than for a reason expressly set forth herein) to purchase and accept delivery of the Bonds pursuant to the terms of this Purchase Contract and the Underwriter shall be released and discharged from any and all claims for damages by the Commission against the Underwriter related to such failure and any other defaults by Underwriter hereunder. The Underwriter and the Commission hereby acknowledge and agree that the amount fixed pursuant to this Section for liquidated damages does not constitute a penalty and is a reasonable estimate of the damages that the Commission would sustain in the event of the Underwriter's failure to purchase and to accept delivery of the Bonds on the Closing Date pursuant to the terms of this Purchase Contract. Said amount is agreed upon and fixed as liquidated damages because of the difficulty of ascertaining as of the date hereof the actual amount of damages that would be sustained in such event. If the Commission fails to deliver the Bonds on the Closing Date pursuant to this Purchase Contract, or if the conditions to the obligations of the Underwriter to purchase, accept delivery of and pay for the Bonds as set forth in this Purchase Contract shall not be satisfied (unless waived in writing by the Underwriter pursuant to this Purchase Contract), or if this Purchase Contract is terminated for a reason set forth in Section 8 hereof, the Commission shall promptly return or cause the return of the Good Faith Deposit to the Underwriter. Upon such return of the Good Faith Deposit to the Underwriter, this Purchase Contract shall terminate, and neither party shall have any further obligations hereunder.

**Section 10. Expenses.**

(a) *Commission.* The Commission shall pay or cause to be paid (but solely from the proceeds of the Bonds and not otherwise) the expenses incident to the performance of the obligations of the Commission hereunder, including but not limited to: (1) the cost of printing of the Preliminary Official Statement and the final Official Statement in reasonable quantities and all other documents prepared in connection with the transactions contemplated hereby; (2) the fees and disbursements of the Trustee and counsel to the Trustee in connection with the issuance of the Bonds; (3) the fees and disbursements of Co-Bond Counsel and Disclosure Counsel and of Public Financial Management, Inc. and Kitahata & Company, as Co-Financial Advisors to the Commission, and any other experts or consultants retained by the Commission in connection with the transactions contemplated hereby; and (4) the costs related to obtaining ratings.

(b) *Underwriter.* The Underwriter shall pay: (1) the cost of preparation and printing of Blue Sky and Legal Investment Memoranda, if any, to be used by it; (2) all advertising expenses in connection with the public offering of the Bonds; (3) California Debt and Investment Advisory Commission fees; and (4) all other expenses incurred by the Underwriter in connection with its public offering and distribution of the Bonds, including, without limitation, any experts or other consultants hired or retained by the Underwriter, including Underwriter's counsel, the fees and charges of the CUSIP Bureau, and the MSRB and the California Debt and Investment Advisory Commission.

**Section 11. City Contracting Requirements.** The provisions set forth in Appendix A, attached hereto, are incorporated herein by this reference.

**Section 12. Notices.** Any notice or other communication to be given under this Purchase Contract to the Commission or the Underwriter may be given by delivering the same in writing at the addresses set forth below:

If to the Commission:

Public Utilities Commission of the  
City and County of San Francisco  
525 Golden Gate Avenue, 13<sup>th</sup> Floor  
San Francisco, California 94102  
Attention: Chief Financial Officer  
Telephone: (415) 554-3155  
Fax: (415) 554-3161

With a copy to:

City and County of San Francisco  
Office of Public Finance  
City Hall, Room 336  
1 Dr. Carlton B. Goodlett Place  
San Francisco, California 94102  
Telephone: (415) 554-5956  
Fax: (415) 554-4864

If to the Underwriter:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
Telephone: \_\_\_\_\_  
Fax: \_\_\_\_\_

**Section 13. Entire Agreement.** This Purchase Contract, when accepted by the Commission, shall constitute the entire agreement between the Commission and the Underwriter and is made solely for the benefit of the Commission and the Underwriter (including the successors or assigns of any Underwriter with the consent of the Commission) and no other person shall acquire or have any right hereunder by virtue hereof. All of the Commission's representations, covenants and agreements in this Purchase Contract shall remain operative and in full force and effect, regardless of (a) any investigation made by or on behalf of the Underwriter, (b) delivery of and payment for the Bonds hereunder, and (c) any termination of this Purchase Contract.

*Section 14. Counterparts.* This Purchase Contract may be executed by the parties hereto in separate counterparts, each of which when so executed and delivered shall be an original, but all such counterparts shall together constitute but one and the same instrument. This Purchase Contract may be signed in counterparts, and upon delivery to the other party of such signed Purchase Contract, which delivery may be by facsimile transmission, shall constitute the binding agreement of each party to this Purchase Contract.

*Section 15. Mutual Reliance on Representations and Warranties.* The Commission hereby acknowledges that the Underwriter, in executing this Purchase Contract and in paying for the Bonds as provided herein, is relying upon the representations of the Commission set forth herein. The Underwriter hereby acknowledges that the Commission, in executing this Purchase Contract and issuing the Bonds described herein, is relying upon the representations and warranties of the Underwriter set forth herein.

*Section 16. Severability.* In case any one or more of the provisions contained herein shall for any reason be held to be invalid, illegal or unenforceable in any respect, such invalidity, illegality or unenforceability shall not affect any other provision hereof, but this Purchase Contract shall be construed as if such invalid or illegal or unenforceable provision had never been contained herein.

*Section 17. State of California Law Governs.* The validity, interpretation and performance of this Purchase Contract shall be governed by the laws of the State of California. This Purchase Contract shall be enforceable in the State of California, and any action arising out of this Purchase Contract shall be filed with and maintained in City and County of San Francisco Superior Court, San Francisco, California; provided, that the Commission may waive the requirement of venue.

*Section 18. Limited Liability.* The obligations and liabilities of the Commission hereunder are limited obligations of the Commission payable solely from Revenues as defined and set forth in the Indenture. None of the Commissioners, the officers or employees of the Commission, or any person executing this Purchase Contract shall be liable personally for the obligations of the Commission hereunder or be subject to any personal liability or accountability by reason of the execution hereof. Neither of the faith and credit nor the taxing power of the State or any political subdivision thereof, including the City, is pledged to the obligations of the Commission hereunder.

*Section 19. No Fiduciary or Advisory Role; Arm's Length Transaction.* The Underwriter and the Commission acknowledge and agree that (i) the purchase and sale of the Bonds pursuant to this Purchase Contract is an arm's-length commercial transaction between Commission, on the one hand, and the Underwriter, on the other hand, (ii) in connection with such transaction, the Underwriter is acting solely as a principal and not as a municipal advisor, a financial advisor, or a fiduciary of the Commission, and may have financial and other interests that differ from those of the Commission, (iii) the Underwriter has not assumed a fiduciary responsibility in favor of the Commission with respect to the offering of the Bonds or the discussions, undertakings and procedures leading thereto (whether or not any Underwriter, or any affiliate of an Underwriter, has provided or is currently providing services or advice to Commission on other matters), and (iv) the Commission and the Underwriter have consulted



with their respective legal, financial and other advisors to the extent they deemed appropriate in connection with the offering of the Bonds. The Underwriter is not acting as a Municipal Advisor to the Commission (as defined in Section 15B of the Exchange Act of 1934, as amended) in connection with the matters contemplated by this Purchase Contract.

Very truly yours,

WELLS FARGO BANK, N.A.,  
as Underwriter

By: \_\_\_\_\_

Authorized Officer

Accepted as of the date first stated above:

PUBLIC UTILITIES COMMISSION OF THE  
CITY AND COUNTY OF SAN FRANCISCO

By: \_\_\_\_\_

General Manager

Approved as to Form:

DENNIS J. HERRERA  
City Attorney

By: \_\_\_\_\_

Mark D. Blake, Deputy City Attorney

**SCHEDULE I**  
**TO THE PURCHASE CONTRACT**  
**MATURITY SCHEDULE**

\$ \_\_\_\_\_

**2015 Series A**

<b>Maturity</b> <b>( 1 )</b>	<b>Principal</b> <b>Amount</b>	<b>Interest</b> <b>Rate</b>	<b>Yield</b>	<b>Price</b>	<b>CUSIP</b>
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## APPENDIX A

### CITY CONTRACTING PROVISIONS

[To be updated]

The following provisions shall apply to this Purchase Contract as if set forth in the text thereof. Capitalized terms used but not defined in this Appendix shall have the meanings given in this Purchase Contract.

(a) *Conflict of Interest.* By the execution of this Purchase Contract, the Underwriter acknowledges that it is familiar with the provision of Section 15.103 of the City's Charter, Article III, Chapter 2 of City's Campaign and Governmental Conduct Code, and Section 87100 et seq. and Section 1090 et seq. of the Government Code of the State of California, and certifies that it does not know of any facts which constitute a violation of said provisions and agrees that it will immediately notify the City if it becomes aware of any such fact during the term of this Purchase Contract.

(b) *Proprietary or Confidential Information of City.* The Underwriter agrees to maintain the confidentiality of the Information (as defined hereinbelow), except that Information may be disclosed (a) to its and its affiliates' directors, officers, employees and agents, including accountants, legal counsel and other advisors (it being understood that the persons to whom such disclosure is made will be informed of the confidential nature of such Information and instructed to keep such Information confidential), (b) to the extent requested by any regulatory authority, (c) to the extent required by applicable laws or regulations or by any subpoena or similar legal process, (d) to any other party to this Purchase Contract, (e) in connection with the exercise of any remedies hereunder or any suit, action or proceeding relating to this Purchase Contract or the enforcement of rights hereunder, (f) subject to an agreement containing provisions substantially the same as those of this section, to (i) any assignee of or participant in, or any prospective assignee of or participant in, any of its rights or obligations under this Purchase Contract or (ii) any actual or prospective counterparty (or its advisors) to any swap or derivative transaction relating to the City and its obligations, (g) with the consent of the City or (h) to the extent such Information (i) becomes publicly available other than as a result of a breach of this section or (ii) becomes available to the Underwriter on a nonconfidential basis from a source other than the City. For the purposes of this Section, "Information" means all information received from the City relating to the City or its business, other than any such information that is available to the Issuing Underwriter on a nonconfidential basis prior to disclosure by the City; *provided* that, in the case of information received from the City after the date hereof, such information is clearly identified at the time of delivery as confidential. Any person required to maintain the confidentiality of Information as provided in this section shall be considered to have complied with its obligation to do so if such person has exercised the same degree of care to maintain the confidentiality of such Information as such person would apply to its own confidential information.

(c) *Ownership of Results.* Any interest of the Underwriter's Subcontractors, in drawings, plans, specifications, blueprints, studies, reports, memoranda, computation sheets, computer files and media or other documents prepared by the Underwriter or its Subcontractors in connection with services to be performed under this Purchase Contract, shall become the

property of and will be transmitted to City. However, the Underwriter may retain and use copies for reference and as documentation of their experience and capabilities.

(d) *Works for Hire.* If, in connection with services performed under this Purchase Contract, the Underwriter or its Subcontractors create artwork, copy, posters, billboards, photographs, videotapes, audiotapes, systems designs, software, reports, diagrams, surveys, blueprints, source codes or any other original works of authorship, such works of authorship shall be works for hire as defined under Title 17 of the United States Code, and all copyrights in such works are the property of the City. If it is ever determined that any works created by the Underwriter or its Subcontractors under this Purchase Contract are not works for hire under U.S. law, the Underwriter hereby assigns all copyrights to such works to the City, and agree to provide any material and execute any documents necessary to effectuate such assignment. With the approval of the City, the Underwriter may retain and use copies of such works for reference and as documentation of its experience and capabilities.

(e) *Audit and Inspection of Records.* The Underwriter agrees to maintain and make available to the City, during regular business hours, accurate books and accounting records relating to its work under this Purchase Contract. The Underwriter will permit City to audit, examine and make excerpts and transcripts from such books and records, and to make audits of all invoices, materials, payrolls, records of personnel and other data related to all other matters covered by this Purchase Contract, whether funded in whole or in part under this Purchase Contract. The Underwriter shall maintain such data and records in an accessible location and condition for a period of not less than five (5) years after final payment under this Purchase Contract or until after final audit has been resolved, whichever is later. The State of California or any federal agency having an interest in the subject matter of this Purchase Contract shall have the same rights conferred upon City by this Section.

(f) *Subcontracting.* The Underwriter is prohibited from subcontracting this Purchase Contract or any part of it unless such subcontracting is first approved by City in writing. Neither party shall, on the basis of this Purchase Contract, contract on behalf of or in the name of the other party. An agreement made in violation of this provision shall confer no rights on any party and shall be null and void.

(g) *Assignment.* The services to be performed by the Underwriter is personal in character and neither this Purchase Contract nor any duties or obligations hereunder may be assigned or delegated by the Underwriter unless first approved by City by written instrument executed and approved in the same manner as this Purchase Contract.

(h) *Non-Waiver of Rights.* The omission by either party at any time to enforce any default or right reserved to it, or to require performance of any of the terms, covenants, or provisions hereof by the other party at the time designated, shall not be a waiver of any such default or right to which the party is entitled, nor shall it in any way affect the right of the party to enforce any provisions of this Purchase Contract thereafter.

(i) *Earned Income Credit (EIC) Forms.* Administrative Code section 120 requires that employers provide their employees with IRS Form W-5 (The Earned Income Credit Advance Payment Certificate) and the IRS EIC Schedule, as set forth below. Employers can locate these

forms at the IRS Office, on the Internet, or anywhere that Federal Tax Forms can be found. The Underwriter shall provide EIC Forms to each Eligible Employee at each of the following times: (i) within thirty (30) days following the date on which this Purchase Contract becomes effective (unless the Underwriter has already provided such EIC Forms at least once during the calendar year in which such effective date falls); (ii) promptly after any Eligible Employee is hired by the Underwriter; and (iii) annually between January 1 and January 31 of each calendar year during the term of this Purchase Contract. Failure to comply with any requirement contained in subparagraph (a) of this Section shall constitute a material breach by Underwriter of the terms of this Purchase Contract. If, within thirty days after the Underwriter receives written notice of such a breach, said Underwriter fails to cure such breach or, if such breach cannot reasonably be cured within such period of thirty days, said Underwriter fails to commence efforts to cure within such period or thereafter fails to diligently pursue such cure to completion, the City may pursue any rights or remedies available under this Purchase Contract or under applicable law. Any Subcontract entered into by the Underwriter shall require the Subcontractor to comply, as to the Subcontractor's Eligible Employees, with each of the terms of this Section. Capitalized terms used in this Section and not defined in this Purchase Contract shall have the meanings assigned to such terms in Section 120 of the San Francisco Administrative Code.

(j) *Local Business Enterprise Utilization; Liquidated Damages*

i. The LBE Ordinance. The Underwriter shall comply with all the requirements of the Local Business Enterprise and Non-Discrimination in Contracting Ordinance set forth in Chapter 14B of the San Francisco Administrative Code as it now exists or as it may be amended in the future (collectively the "*LBE Ordinance*"), provided such amendments do not materially increase the Underwriter's obligations or liabilities, or materially diminish the Underwriter's rights under this Purchase Contract. Such provisions of the LBE Ordinance are incorporated by reference and made a part of this Purchase Contract as though fully set forth in this Section. Any Underwriter's willful failure to comply with any applicable provisions of the LBE Ordinance is a material breach of the Underwriter's obligations under this Purchase Contract and shall entitle City, subject to any applicable notice and cure provisions set forth in this Purchase Contract, to exercise any of the remedies provided for under this Purchase Contract, under the LBE Ordinance or otherwise available at law or in equity, which remedies shall be cumulative unless this Purchase Contract expressly provides that any remedy is exclusive. In addition, the Underwriter shall comply fully with all other applicable local, state and federal laws prohibiting discrimination and requiring equal opportunity in contracting, including subcontracting.

ii. Compliance and Enforcement. If any Underwriter willfully fails to comply with any of the provisions of the LBE Ordinance, the rules and regulations implementing the LBE Ordinance, or the provisions of this Purchase Contract pertaining to LBE participation, the Underwriter shall be liable for liquidated damages in an amount equal to the Underwriter's net profit on this Purchase Contract, or ten percent (10%) of the total amount of this Purchase Contract, or one thousand dollars (\$1,000), whichever is greatest. The Director of the City's Human Rights Commission or any other public official authorized to enforce the LBE Ordinance (separately and collectively, the "Director of HRC") may also impose other sanctions against the Underwriter authorized in the LBE Ordinance, including declaring the Underwriter to be irresponsible and ineligible to contract with the City for a period of up to five years or revocation of the Underwriter's LBE certification. The Director of HRC will determine the sanctions to be

imposed, including the amount of liquidated damages, after investigation pursuant to Administrative Code §14B.17. By entering into this Purchase Contract, the Underwriter acknowledges and agrees that any liquidated damages assessed by the Director of the HRC shall be payable to City upon demand. The Underwriter further acknowledges and agrees that any liquidated damages assessed may be withheld from any monies due to the Underwriter on any contract with City. The Underwriter agrees to maintain records necessary for monitoring its compliance with the LBE Ordinance for a period of three (3) years following termination or expiration of this Purchase Contract, and shall make such records available for audit and inspection by the Director of HRC or the Controller upon request.

(k) *Nondiscrimination; Penalties*

i. The Underwriter Shall Not Discriminate. In the performance of this Purchase Contract, the Underwriter agrees not to discriminate against any employee, City or County employee working with such Underwriter or Subcontractor, applicant for employment with such Underwriter or Subcontractor, or against any person seeking accommodations, advantages, facilities, privileges, services, or membership in all business, social, or other establishments or organizations, on the basis of the fact or perception of a person's race, color, creed, religion, national origin, ancestry, age, height, weight, sex, sexual orientation, gender identity, domestic partner status, marital status, disability or Acquired Immune Deficiency Syndrome or HIV status (AIDS/HIV status), or association with members of such protected classes, or in retaliation for opposition to discrimination against such classes.

ii. Subcontracts. The Underwriter shall incorporate by reference in all of its respective subcontracts the provisions of §§12B.2(a), 12B.2(c)-(k), and 12C.3 of the San Francisco Administrative Code (copies of which are available from Purchasing) entered into in connection with the services provided hereunder by the Underwriter and shall require all Subcontractors to comply with such provisions. The Underwriter's failure to comply with the obligations in this subsection shall constitute a material breach of this Purchase Contract.

iii. Nondiscrimination in Benefits. The Underwriter does not, as of the date of this Purchase Contract, and will not, during the term of this Purchase Contract, in any of its operations in San Francisco, on real property owned by San Francisco, or where work is being performed for the City elsewhere in the United States, discriminate in the provision of bereavement leave, family medical leave, health benefits, membership or membership discounts, moving expenses, pension and retirement benefits or travel benefits, as well as any benefits other than the benefits specified above, between employees with domestic partners and employees with spouses, and/or between the domestic partners and spouses of such employees, where the domestic partnership has been registered with a governmental entity pursuant to state or local law authorizing such registration, subject to the conditions set forth in §12B.2(b) of the San Francisco Administrative Code.

iv. Condition to Contract. As a condition to this Purchase Contract, the Underwriter shall execute the "Chapter 12B Declaration: Nondiscrimination in Contracts and Benefits" form (form HRC-12B-101) with supporting documentation and secure the approval of the form by the San Francisco Human Rights Commission.

v. Incorporation of Administrative Code Provisions by Reference. The provisions of Chapters 12B and 12C of the San Francisco Administrative Code are incorporated in this Section by reference and made a part of this Purchase Contract as though fully set forth herein. The Underwriter shall comply fully with and be bound by all of the provisions that apply to this Purchase Contract under such Chapters, including but not limited to the remedies provided in such Chapters. Without limiting the foregoing, the Underwriter understands that pursuant to §§12B.2(h) and 12C.3(g) of the San Francisco Administrative Code, a penalty of fifty dollars (\$50) for each person for each calendar day during which such person was discriminated against in violation of the provisions of this Purchase Contract may be assessed against the offending Underwriter and/or deducted from any payments due to the Underwriter.

(l) *MacBride Principles—Northern Ireland.* Pursuant to San Francisco Administrative Code §12F.5, the City and County of San Francisco urges companies doing business in Northern Ireland to move towards resolving employment inequities, and encourages such companies to abide by the MacBride Principles. The City and County of San Francisco urges San Francisco companies to do business with corporations that abide by the MacBride Principles. By signing below, the Underwriter acknowledges and agrees that he or she has read and understood this Section.

(m) *Tropical Hardwood and Virgin Redwood Ban.* Pursuant to §804(b) of the San Francisco Environment Code, the City and County of San Francisco urges the Underwriter not to import, purchase, obtain, or use for any purpose, any tropical hardwood, tropical hardwood wood product, virgin redwood or virgin redwood wood product.

(n) *Drug-Free Workplace Policy.* The Underwriter acknowledges that pursuant to the Federal Drug-Free Workplace Act of 1989, the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited on City premises. The Underwriter agrees that any violation of this prohibition by the Underwriter or its employees, agents or assigns will be deemed a material breach of this Purchase Contract.

(o) *Resource Conservation.* Chapter 5 of the San Francisco Environment Code ("*Resource Conservation*") is incorporated herein by reference. Failure by the Underwriter to comply with any of the applicable requirements of Chapter 5 will be deemed a material breach of this Purchase Contract.

(p) *Compliance with Americans with Disabilities Act.* The Underwriter acknowledges that, pursuant to the Americans with Disabilities Act (ADA) programs, services and other activities provided by a public entity to the public, whether directly or through an Underwriter, must be accessible to the disabled public. The Underwriter shall provide the services specified in this Purchase Contract in a manner that complies with the ADA and any and all other applicable federal, state and local disability rights legislation. The Underwriter agrees not to discriminate against disabled persons in the provision of services, benefits or activities provided under this Purchase Contract and further agree that any violation of this prohibition on the part of the Underwriter or its employees, agents or assigns will constitute a material breach of this Purchase Contract.



(q) *Sunshine Ordinance.* In accordance with San Francisco Administrative Code §67.24(e), contracts, Underwriter's bids, responses to solicitations and all other records of communications between City and persons or firms seeking contracts, shall be open to inspection immediately after a contract has been awarded. Nothing in this provision requires the disclosure of a private person or organization's net worth or other proprietary financial data submitted for qualification for a contract or other benefit until and unless that person or organization is awarded the contract or benefit. Information provided which is covered by this paragraph will be made available to the public upon request.

(r) *Public Access to Meetings and Records.* If an Underwriter receives a cumulative total per year of at least two hundred fifty thousand dollars (\$250,000) in City funds or City-administered funds and is a non-profit organization as defined in Chapter 12L of the San Francisco Administrative Code, the Underwriter shall comply with and be bound by all the applicable provisions of that Chapter. By executing this Purchase Contract, the Underwriter agrees to open its meetings and records to the public in the manner set forth in §§12L.4 and 12L.5 of the Administrative Code. The Underwriter further agrees to make good faith efforts to promote community membership on its Board of Directors in the manner set forth in §12L.6 of the Administrative Code. The Underwriter acknowledges that its material failure to comply with any of the provisions of this paragraph shall constitute a material breach of this Purchase Contract. The Underwriter further acknowledges that such material breach of the Purchase Contract shall be grounds for the City to terminate and/or not renew the Purchase Contract, partially or in its entirety.

(s) *Limitations on Contributions.* Through execution of this Purchase Contract, the Underwriter acknowledges that it is familiar with Section 1.126 of the City's Campaign and Governmental Conduct Code, which prohibits any person who contracts with the City for the rendition of personal services, for the furnishing of any material, supplies or equipment, for the sale or lease of any land or building, or for a grant, loan or loan guarantee, from making any campaign contribution to (1) an individual holding a City elective office if the contract must be approved by the individual, a board on which that individual serves, or the board of a state agency on which an appointee of that individual serves, (2) a candidate for the office held by such individual, or (3) a committee controlled by such individual, at any time from the commencement of negotiations for the contract until the later of either the termination of negotiations for such contract or six months after the date the contract is approved. The Underwriter acknowledges that the foregoing restriction applies only if the Purchase Contract or a combination or series of contracts approved by the same individual or board in a fiscal year have a total anticipated or actual value of fifty thousand dollars (\$50,000) or more. The Underwriter further acknowledges that the prohibition on contributions applies to each prospective party to the Purchase Contract; each member of the Underwriter's board of directors; the Underwriter's chairperson, chief executive officer, chief financial officer and chief operating officer; any person with an ownership interest of more than 20 percent in the Underwriter; any Subcontractor listed in the bid or contract; and any committee that is sponsored or controlled by the Underwriter. Additionally, the Underwriter acknowledges that the Underwriter must inform each of the persons described in the preceding sentence of the prohibitions contained in Section 1.126. The Underwriter further agrees to provide to City, upon request, the names of each person, entity or committee described above.

(t) *Requiring Minimum Compensation for Covered Employees*

i. The Underwriter agrees to comply fully with and be bound by all of the provisions of the Minimum Compensation Ordinance (“MCO”), as set forth in San Francisco Administrative Code Chapter 12P (“Chapter 12P”), including the remedies provided, and implementing guidelines and rules. The provisions of Chapter 12P are incorporated herein by reference and made a part of this Purchase Contract as though fully set forth. The text of the MCO is available on the web at [www.sfgov.org/olse/mco](http://www.sfgov.org/olse/mco). A partial listing of some of the Underwriter’s obligations under the MCO is set forth in this Section. The Underwriter is required to comply with all the provisions of the MCO, irrespective of the listing of obligations in this Section.

ii. The MCO requires the Underwriter to pay the Underwriter’s employees a minimum hourly gross compensation wage rate and to provide minimum compensated and uncompensated time off. The minimum wage rate may change from year to year and the Underwriter is obligated to keep informed of the then-current requirements. Any subcontract entered into by the Underwriter shall require the Subcontractor to comply with the requirements of the MCO and shall contain contractual obligations substantially the same as those set forth in this Section. It is the Underwriter’s obligation to ensure that any Subcontractors of any tier under this Purchase Contract comply with the requirements of the MCO. If any Subcontractor under this Purchase Contract fails to comply, City may pursue any of the remedies set forth in this Section against the Underwriter.

iii. The Underwriter shall not take adverse action or otherwise discriminate against an employee or other person for the exercise or attempted exercise of rights under the MCO. Such actions, if taken within ninety (90) days of the exercise or attempted exercise of such rights, will be rebuttably presumed to be retaliation prohibited by the MCO.

iv. The Underwriter shall maintain employee and payroll records as required by the MCO. If the Underwriter fails to do so, it shall be presumed that the Underwriter paid no more than the minimum wage required under State law.

v. The City is authorized to inspect the Underwriter’s job sites and conduct interviews with employees and conduct audits of the Underwriter.

vi. The Underwriter’s commitment to provide the Minimum Compensation is a material element of the City’s consideration for this Purchase Contract. The City in its sole discretion shall determine whether such a breach has occurred. The City and the public will suffer actual damage that will be impractical or extremely difficult to determine if the Underwriter fails to comply with these requirements. The Underwriter agrees that the sums set forth in Section 12P.6.1 of the MCO as liquidated damages are not a penalty, but are reasonable estimates of the loss that the City and the public will incur for the Underwriter’s noncompliance. The procedures governing the assessment of liquidated damages shall be those set forth in Section 12P.6.2 of Chapter 12P.

vii. The Underwriter understands and agrees that if it fails to comply with the requirements of the MCO, the City shall have the right to pursue any rights or remedies available

under Chapter 12P (including liquidated damages), under the terms of the contract, and under applicable law. If, within thirty (30) days after receiving written notice of a breach of this Purchase Contract for violating the MCO, the breaching Underwriter fails to cure such breach or, if such breach cannot reasonably be cured within such period of thirty (30) days, the breaching Underwriter fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, the City shall have the right to pursue any rights or remedies available under applicable law, including those set forth in Section 12P.6(c) of Chapter 12P. Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to the City.

*viii.* The Underwriter represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the MCO.

*ix.* If an Underwriter is exempt from the MCO when this Purchase Contract is executed because the cumulative amount of agreements with this department for the fiscal year is less than twenty-five thousand dollars (\$25,000), but the Underwriter later enters into an agreement or agreements that cause the Underwriter to exceed that amount in a fiscal year, the Underwriter shall thereafter be required to comply with the MCO under this Purchase Contract. This obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between the Underwriter and this department to exceed twenty-five thousand dollars (\$25,000) in the fiscal year.

*(u) Requiring Health Benefits for Covered Employees*

The Underwriter agrees to comply fully with and be bound by all of the provisions of the Health Care Accountability Ordinance (“HCAO”), as set forth in San Francisco Administrative Code Chapter 12Q, including the remedies provided, and implementing regulations, as the same may be amended from time to time. The provisions of Chapter 12Q are incorporated by reference and made a part of this Purchase Contract as though fully set forth herein. The text of the HCAO is available on the web at [www.sfgov.org/olse](http://www.sfgov.org/olse). Capitalized terms used in this Section and not defined in this Purchase Contract shall have the meanings assigned to such terms in Chapter 12Q.

*i.* For each of its Covered Employees, the Underwriter shall provide the appropriate health benefit set forth in Section 12Q.3 of the HCAO. If the Underwriter chooses to offer the health plan option, such health plan shall meet the minimum standards set forth by the San Francisco Health Commission.

*ii.* Notwithstanding the above, if the Underwriter is a small business as defined in Section 12Q.3(e) of the HCAO, it shall have no obligation to comply with part (a) above.

*iii.* An Underwriter’s failure to comply with the HCAO shall constitute a material breach of this agreement. City shall notify the Underwriter if such a breach has occurred. If, within thirty (30) days after receiving City’s written notice of a breach of this Purchase Contract for violating the HCAO, the breaching Underwriter fails to cure such breach or, if such breach cannot reasonably be cured within such period of thirty (30) days, the

breaching Underwriter fails to commence efforts to cure within such period, or thereafter fails diligently to pursue such cure to completion, City shall have the right to pursue the remedies set forth in 12Q.5.1 and 12Q.5(f)(1-6). Each of these remedies shall be exercisable individually or in combination with any other rights or remedies available to City.

*iv.* Any Subcontract entered into by the Underwriter shall require the Subcontractor to comply with the requirements of the HCAO and shall contain contractual obligations substantially the same as those set forth in this Section. The Underwriter shall notify City's Office of Contract Administration when it enters into such a Subcontract and shall certify to the Office of Contract Administration that it has notified the Subcontractor of the obligations under the HCAO and has imposed the requirements of the HCAO on Subcontractor through the Subcontract. The Underwriter shall be responsible for its Subcontractors' compliance with this Chapter. If a Subcontractor fails to comply, the City may pursue the remedies set forth in this Section against the Underwriter based on the Subcontractor's failure to comply, provided that City has first provided the Underwriter with notice and an opportunity to obtain a cure of the violation.

*v.* No Underwriter shall discharge, reduce in compensation, or otherwise discriminate against any employee for notifying City with regard to the Underwriter's noncompliance or anticipated noncompliance with the requirements of the HCAO, for opposing any practice proscribed by the HCAO, for participating in proceedings related to the HCAO, or for seeking to assert or enforce any rights under the HCAO by any lawful means.

*vi.* The Underwriter represents and warrants that it is not an entity that was set up, or is being used, for the purpose of evading the intent of the HCAO.

*vii.* The Underwriter shall maintain employee and payroll records in compliance with the California Labor Code and Industrial Welfare Commission orders, including the number of hours each employee has worked on the Purchase Contract.

*viii.* The Underwriter shall keep itself informed of the current requirements of the HCAO.

*ix.* The Underwriter shall provide reports to the City in accordance with any reporting standards promulgated by the City under the HCAO, including reports on Subcontractors and Subtenants, as applicable.

*x.* The Underwriter shall provide City with access to records pertaining to compliance with HCAO after receiving a written request from City to do so and being provided at least ten (10) business days to respond.

*xi.* The Underwriter shall allow City to inspect the Underwriter's job sites and have access to the Underwriter's employees in order to monitor and determine compliance with HCAO.

*xii.* City may conduct random audits of the Underwriter to ascertain its compliance with HCAO. The Underwriter agrees to cooperate with City when it conducts such audits.

xiii. If an Underwriter is exempt from the HCAO when this Purchase Contract is executed because its amount is less than \$25,000 (\$50,000 for nonprofits), but the Underwriter later enters into an agreement or agreements that cause the Underwriter's aggregate amount of all agreements with City to reach \$75,000, all the agreements shall be thereafter subject to the HCAO. This obligation arises on the effective date of the agreement that causes the cumulative amount of agreements between the Underwriter and the City to be equal to or greater than \$75,000 in the fiscal year.

(v) *Prohibition on Political Activity with City Funds.* In accordance with San Francisco Administrative Code Chapter 12.G, the Underwriter may not participate in, support, or attempt to influence any political campaign for a candidate or for a ballot measure (collectively, "Political Activity") in the performance of the services provided under this Purchase Contract. The Underwriter agrees to comply with San Francisco Administrative Code Chapter 12.G and any implementing rules and regulations promulgated by the City's Controller. The terms and provisions of Chapter 12.G are incorporated herein by this reference. In the event an Underwriter violates the provisions of this Section, the City may, in addition to any other rights or remedies available hereunder, (i) terminate this Purchase Contract or the Underwriter's participation hereunder, and (ii) prohibit the Underwriter from bidding on or receiving any new City contract for a period of two (2) years. The Controller will not consider an Underwriter's use of profit as a violation of this Section.

(w) *Preservative-treated Wood Containing Arsenic.* The Underwriter may not purchase preservative-treated wood products containing arsenic in the performance of this Purchase Contract unless an exemption from the requirements of Chapter 13 of the San Francisco Environment Code is obtained from the Department of the Environment under Section 1304 of the Code. The term "preservative-treated wood containing arsenic" shall mean wood treated with a preservative that contains arsenic, elemental arsenic, or an arsenic copper combination, including, but not limited to, chromated copper arsenate preservative, ammoniacal copper zinc arsenate preservative, or ammoniacal copper arsenate preservative. The Underwriter may purchase preservative-treated wood products on the list of environmentally preferable alternatives prepared and adopted by the Department of the Environment. This provision does not preclude the Underwriter from purchasing preservative-treated wood containing arsenic for saltwater immersion. The term "saltwater immersion" shall mean a pressure-treated wood that is used for construction purposes or facilities that are partially or totally immersed in saltwater.

(x) *Compliance with Laws.* The Underwriter shall keep themselves fully informed of the City's Charter, codes, ordinances and regulations and of all State, and federal laws in any manner affecting the performance of this Purchase Contract, and must at all times comply with such local codes, ordinances, and regulations and all applicable laws as they may be amended from time to time.

(y) *Protection of Private Information.* The Underwriter has read and agrees to the terms set forth in San Francisco Administrative Code Sections 12M.2, "Nondisclosure of Private Information," and 12M.3, "Enforcement" of San Francisco Administrative Code Chapter 12M, "Protection of Private Information," which are incorporated herein as if fully set forth. The Underwriter agrees that any failure to comply with the requirements of Section 12M.2 of this Chapter shall be a material breach of the Purchase Contract. In such an event, in addition to any

other remedies available to it under equity or law, the City may terminate the Purchase Contract, bring a false claim action against the Underwriter pursuant to Chapter 6 or Chapter 21 of the Administrative Code, or debar the Underwriter.-

(z) *Graffiti Removal.* Graffiti is detrimental to the health, safety and welfare of the community in that it promotes a perception in the community that the laws protecting public and private property can be disregarded with impunity. This perception fosters a sense of disrespect of the law that results in an increase in crime; degrades the community and leads to urban blight; is detrimental to property values, business opportunities and the enjoyment of life; is inconsistent with the City's property maintenance goals and aesthetic standards; and results in additional graffiti and in other properties becoming the target of graffiti unless it is quickly removed from public and private property. Graffiti results in visual pollution and is a public nuisance. Graffiti must be abated as quickly as possible to avoid detrimental impacts on the City and County and its residents, and to prevent the further spread of graffiti. The Underwriter shall remove all graffiti from any real property owned or leased by the Underwriter in the City and County of San Francisco within forty eight (48) hours of the earlier of the Underwriter's (a) discovery or notification of the graffiti, or (b) receipt of notification of the graffiti from the Department of Public Works. This Section is not intended to require an Underwriter to breach any lease or other agreement that it may have concerning its use of the real property. The term "graffiti" means any inscription, word, figure, marking or design that is affixed, marked, etched, scratched, drawn or painted on any building, structure, fixture or other improvement, whether permanent or temporary, including by way of example only and without limitation, signs, banners, billboards and fencing surrounding construction sites, whether public or private, without the consent of the owner of the property or the owner's authorized agent, and which is visible from the public right-of-way. "Graffiti" shall not include: (1) any sign or banner that is authorized by, and in compliance with, the applicable requirements of the San Francisco Public Works Code, the San Francisco Planning Code or the San Francisco Building Code; or (2) any mural or other painting or marking on the property that is protected as a work of fine art under the California Art Preservation Act (California Civil Code Sections 987 et seq.) or as a work of visual art under the Federal Visual Artists Rights Act of 1990 (17 U.S.C. §§ 101 et seq.).

Any failure of the Underwriter to comply with this Section of this Purchase Contract shall constitute a material breach of this Purchase Contract.

(aa) *Food Service Waste Reduction Requirements.* Effective June 1, 2007, the Underwriter agrees to comply fully with and be bound by all of the provisions of the Food Service Waste Reduction Ordinance, as set forth in San Francisco Environment Code Chapter 16, including the remedies provided, and implementing guidelines and rules. The provisions of Chapter 16 are incorporated herein by reference and made a part of this Purchase Contract as though fully set forth. This provision is a material term of this Purchase Contract. By entering into this Purchase Contract, the Underwriter agrees that if it breaches this provision, City will suffer actual damages that will be impractical or extremely difficult to determine; further, the Underwriter agrees that the sum of one hundred dollars (\$100) liquidated damages for the first breach, two hundred dollars (\$200) liquidated damages for the second breach in the same year, and five hundred dollars (\$500) liquidated damages for subsequent breaches in the same year is a reasonable estimate of the damage that City will incur based on the violation, established in light of the circumstances existing at the time this Purchase Contract was made. Such amount shall

not be considered a penalty, but rather agreed monetary damages sustained by City because of the Underwriter's failure to comply with this provision.

(bb) *Cooperative Drafting.* This Purchase Contract has been drafted through a cooperative effort of both parties, and both parties have had an opportunity to have the Purchase Contract reviewed and revised by legal counsel. No party shall be considered the drafter of this Purchase Contract, and no presumption or rule that an ambiguity shall be construed against the party drafting the clause shall apply to the interpretation or enforcement of this Purchase Contract.

(cc) *Submitting False Claims; Monetary Penalties.* Pursuant to San Francisco Administrative Code Section 21.35, any contractor, subcontractor or consultant who submits a false claim shall be liable to the City for three times the amount of damages which the City sustains because of the false claim. A contractor, subcontractor or consultant who submits a false claim shall also be liable to the City for the costs, including attorneys' fees, of a civil action brought to recover any of those penalties or damages, and may be liable to the City for a civil penalty of up to ten thousand dollars (\$10,000) for each false claim. A contractor, subcontractor or consultant will be deemed to have submitted a false claim to the City if the contractor, subcontractor or consultant: (i) knowingly presents or causes to be presented to an officer or employee of the City a false claim or request for payment or approval; (ii) knowingly makes, uses, or causes to be made or used a false record or statement to get a false claim paid or approved by the City; (iii) conspires to defraud the City by getting a false claim allowed or paid by the City; (iv) knowingly makes, uses, or causes to be made or used a false record or statement to conceal, avoid, or decrease an obligation to pay or transmit money or property to the City; or (v) is a beneficiary of an inadvertent submission of a false claim to the City, subsequently discovers the falsity of the claim, and fails to disclose the false claim to the City within a reasonable time after discovery of the false claim.

(dd) *City a Third Party Beneficiary.* The City is hereby designated as a third party beneficiary for the purpose of enforcing all of the obligations of this Purchase Contract.

**APPENDIX B**

**CERTIFICATE OF THE UNDERWRITER  
REGARDING INITIAL REOFFERING PRICES**

**Public Utilities Commission of the City and County of San Francisco  
Power Revenue Bonds, 2015 Series A**

This certificate is being delivered by Wells Fargo Bank, N.A. (the "Underwriter"), the underwriter listed in the Bond Purchase Contract, dated \_\_\_\_\_, 2015 between the Underwriter and Public Utilities Commission of the City and County of San Francisco (the "Commission") for the sale of \$\_\_\_\_\_ aggregate principal amount of Public Utilities Commission of the City and County of San Francisco Power Revenue Bonds, 2015 Series A (the "Bonds").

**THE UNDERSIGNED HEREBY CERTIFY AS FOLLOWS:**

1. The undersigned is the underwriter who purchased the Bonds. The undersigned is authorized to execute this certificate, which is based on one or more of (i) personal knowledge, (ii) inquiry deemed adequate by the undersigned and (iii) institutional knowledge regarding the matters set forth herein.

2. On [Date] (the "Sale Date"), all of the Bonds have been the subject of a *bona fide* offering to the public (excluding bond houses, brokers or similar persons or organizations acting in the capacity of underwriters or wholesalers) (the "Public") pursuant to the Bond Purchase Contract, and on the Sale Date we reasonably expected that the first price at which at least 10% of the principal amount of each maturity would be initially sold to the Public would be the respective price for that maturity shown, as set forth in Schedule I hereto. The first price at which at least 10% of the principal amount of each maturity initially was sold to the Public was the respective price for that maturity shown on Schedule I hereto. For purposes of this certificate, we have assumed that the phrase "bond houses, brokers or similar persons or organizations acting in the capacity of underwriters or wholesalers" refers only to persons who, to our actual knowledge, are acting in such capacity.

3. We have no reason to believe that the prices shown on Schedule I hereto, in the opinion of the Underwriter, represent prices that are greater than the expected fair market value for all of the Bonds as of the Sale Date.



4. The Commission may rely on the foregoing representations in making its certification as to issue price of the Bonds under the Code, and Orrick, Herrington & Sutcliffe LLP and Curls Bartling P.C., as co-bond counsel, may rely on the foregoing representations in rendering their opinion that interest on the Bonds is excluded from gross income for federal income tax purposes; provided, however, that nothing herein represents our interpretation of any laws, and in particular, regulations under section 148 of the Code.

\_\_\_\_\_, 2015

WELLS FARGO BANK, N.A.

By: \_\_\_\_\_  
Authorized Representative



**San Francisco  
Water Power Sewer**

Operator of the Hetch Hetchy Regional Water System

Bureau of Environmental Management  
525 Golden Gate Avenue, 6th Floor  
San Francisco, CA 94102  
T (415) 934-5700  
F (415) 934-5750

November 24, 2014

Ms. Sarah B. Jones, Environmental Review Officer  
Environmental Planning Division  
San Francisco Planning Department  
1650 Mission Street, Fourth Floor  
San Francisco, CA 94103

RE: 2015A Power Enterprise Bond Sale  
CEQA Statutory Exemption Request

Dear Sarah,

The San Francisco Public Utilities Commission (SFPUC) requests review of a project that is one of several projects for which the SFPUC is proposing to approve the sale of revenue bonds (Series 2015A) to finance planning, design and construction under the California Environmental Quality Act (CEQA). The project consists of planning and feasibility studies for seven activities described below:

- The SFPUC requests Environmental Planning Division (EP) concurrence that the proposed planning and feasibility studies to be funded from the proceeds of the bond sale would be statutorily exempt from environmental review under CEQA Guidelines Section 15262 (Feasibility and Planning Studies). The studies involve possible future actions at these SFPUC power facilities:
  - o Powerhouse Holm Unit 2 Improvements
  - o Oil Containment Upgrade at Holm & Kirkwood Powerhouses
  - o Moccasin Generator Step Up (GSU) Transformers & Oil Containment
  - o Kirkwood Powerhouse Refurbishment & Two Turbin Shutoff Valves (TSOV) Replacement
  - o Moccasin Switchyard Upgrade
  - o Regulatory Compliance for Transmission Lines; Repair and replacement of equipment and facilities at various locations
  - o Switchyard/Substations Rehabilitation (Warnerville sw ph 1)

Edwin M. Lee  
Mayor

Ann Moller Caen  
President

Francesca Victor  
Vice President

Vince Courtney  
Commissioner

Anson Moran  
Commissioner

Harlan L. Kelly, Jr.  
General Manager



Ms. Sarah B. Jones, Environmental Review Officer  
Environmental Planning Division, San Francisco Planning Department  
2015A Power Enterprise Bond Sale CEQA Exemption Request  
November 24, 2014  
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- In addition to the planning and feasibility studies to be funded with the bond proceeds, the SFPUC also proposes to use the revenue bonds to fund three other projects at SFPUC power facilities. For these projects, SFPUC has received categorical exemption concurrence previously from EP. These are:
  - Moccasin Generator Rewind ; Case Number: 2014-1184E, under CEQA Guidelines Section 15301(Existing Facilities), issued August 4, 2014
  - Transmission Lines/Distribution System Moccasin to Warnerville (Don Pedro Crossing) ; Case Number 2014-002073 ENV, Section 15302 (Replacement or Reconstruction), issued August 24, 2014
  - Powerhouse SCADA Upgrade; Section 15301 (Existing Facilities); Section 15301(Existing Facilities)

## **BACKGROUND**

The SFPUC Power Enterprise proposes sale of revenue bonds in 2015 to initiate planning and design of the following activities to address identified operational and safety issues including replacement of equipment that has exceeded the industry standard operational life of that equipment.

## **DESCRIPTIONS OF PROPOSED PLANNING AND FEASIBILITY STUDIES**

The activities described below will involve planning and feasibility analysis of "in-kind" repair or replacement of facilities or equipment.

### Powerhouse Holm Unit 2

The Dion R. Holm Powerhouse (37°53'47.73"N 119°58'06.84"W) was built in 1960 and generates electricity with water that is released from Lake Lloyd. Holm Powerhouse is located at the downstream end of Cherry Power Tunnel in Tuolumne County. Planning and feasibility studies will be conducted regarding possible upgrade of the 13.8kV switchgear, installation of a main breaker, replacement of the power distribution panels, motor control centers, and modification of the main control system to incorporate individual systems into one programmable logic controller (PLC) on Unit 2. Feasibility analysis will

Ms. Sarah B. Jones, Environmental Review Officer  
Environmental Planning Division, San Francisco Planning Department  
2015A Power Enterprise Bond Sale CEQA Exemption Request  
November 24, 2014  
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also include a PLC for the balance of plant station auxiliaries at the powerhouse.

#### Oil Containments Upgrade Holm & Kirkwood Powerhouses

Robert C. Kirkwood Powerhouse (on Intake Powerhouse Road near Cherry Lake Road, 37°44'27.96"N 119°57'11.99"W), completed in 1967 (a third generator unit added in 1987) generates electricity with water that is released from Hetch Hetchy Reservoir. Kirkwood Powerhouse is located at the downstream end of Canyon Tunnel in Tuolumne County. Both Holm and Kirkwood powerhouses have oil-filled transformers which lack adequate oil containment and treatment systems. Condition assessment technical memoranda were prepared for both Powerhouses by Black & Veatch dated January 7, 2010 (Holm Powerhouse) and January 5, 2010 (Kirkwood Powerhouse). It identified the need to upgrade the oil containment and treatment systems to comply with current regulatory standards, and planning and design studies will focus on these identified needs.

#### Moccasin Generator Step Up (GSU) Transformers & Oil Containment

Moccasin Powerhouse was built in 1969 and is located in the town of Moccasin at the intersection of State Route 49 and State Route 120 in Tuolumne County. Planning and feasibility studies will encompass the following: a protection coordination study to verify whether existing equipment can accommodate the new fault of the generator and new transformers; and study of replacement of existing GSU transformers; and enhancement of the secondary oil containment system for each transformer.

#### Kirkwood Powerhouse Refurbishment

Planning and feasibility studies will focus on design plans for removal and replacement of units, switchgear, and breakers; replacement of power distribution panels and motor control centers; installation of discharge analysis instrumentation and other upgrades and equipment installations.

#### Moccasin Switchyard Upgrade

Planning and feasibility studies will focus on design plans for renewal and replacement of switchyard equipment including replacement of circuit breakers and paper-oil-condenser bushings; installation of free-standing surge arresters;

Ms. Sarah B. Jones, Environmental Review Officer  
Environmental Planning Division, San Francisco Planning Department  
2015A Power Enterprise Bond Sale CEQA Exemption Request  
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and evaluation of existing structures such as towers, and post insulator supports.

#### Regulatory Compliance for Transmission Lines

The SFPUC Power Enterprise has identified the need to address operational and safety conditions requiring repair or replacement of equipment and facilities at a number of locations to comply with code requirements specified in the National Electrical Safety Code (NESC), California Public Utilities Commission (CPUC) General Order 95 (Rules for Overhead Electric Line Construction), and federal and State Occupational Safety and Health Administration (OSHA) standards. Studies will identify specific facility upgrades that are necessary to meet these regulatory requirements.

#### Switchyard/Substations Rehabilitation (Warnerville Switchyard Phase 1)

The Warnerville Substation is located on Warnerville Road (37°44'27.96"W 120°48'06.86"W) southeast of the city of Oakdale in Stanislaus County. A condition assessment technical memorandum of the Power Delivery Facilities, including the Warnerville Substation, dated December 31, 2009 was prepared for the SFPUC by consultants Black & Veatch. Planning and feasibility studies will focus on design plans for major renewal and replacement of substation components associated with Bank 2 and Bank 3, such as replacement of circuit breakers; upgrades to the control room; replacement of electrical equipment; and replacement of disconnect switches.

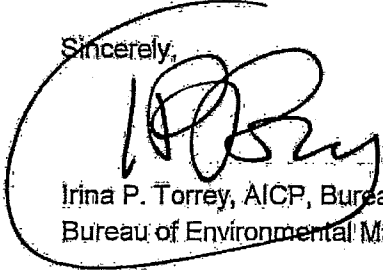
#### **CEQA COMPLIANCE RECOMMENDATION**

The SFPUC recommends that the proposed 2015A Power Enterprise Bond Sale be classified as statutorily exempt under CEQA, Guidelines Section 15262, (**Feasibility and Planning Studies**). The activities will involve various studies and assessment of facilities and will involve no physical changes to the environment.

Ms. Sarah B. Jones, Environmental Review Officer  
Environmental Planning Division, San Francisco Planning Department  
2015A Power Enterprise Bond Sale CEQA Exemption Request  
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If you have any questions regarding the proposed Projects, please contact me  
at 415-554-3232.

Sincerely,



Irina P. Torrey, AICP, Bureau Manager  
Bureau of Environmental Management

Cc: Margaret Hannaford, Manager, Hetch Hetchy Water & Power Division  
Jimmy Leong, Principal Engineer, Project Management Bureau  
Tracy Cael, Director, Hetchy System Improvement Program  
Richard M. Morales, Debt Manager, SFPUC  
Cheryl Sperry, Principal Administrative Analyst, HHWP  
Barry Pearl, AICP, MPA, Senior Environmental Project Manager

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Ms. Sarah B. Jones, Environmental Review Officer  
Environmental Planning Division, San Francisco Planning Department  
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References: Final Historic Resource Evaluation Report for the Moccasin  
Facilities Upgrade Project (Planning Department Case Number  
2011.0835E) prepared by VerPlanck Historic Preservation  
Consulting dated August 23, 2012 (on file at the Environmental  
Planning Division)

Black & Veatch, Power Delivery Facilities Condition Assessment  
technical memorandum dated December 31, 2009 (available  
upon request)

Black & Veatch, Kirkwood Powerhouse Condition assessment  
technical memorandum dated January 5, 2010 (available upon  
request)

Black & Veatch, Holm Powerhouse Condition assessment  
technical memorandum dated January 7, 2010 (available upon  
request)

Black & Veatch, Transmission Line Clearance Mitigation  
Mitigation Plan, Final Draft, dated May 27, 2014 (available upon  
request)

Saylor Consulting, Rough Order Magnitude (R.O.M) Estimate  
Warnerville/ Moccasin Substations, Moccasin  
Transformer & Oil Containment Upgrade dated July 31, 2013  
(available upon request)



# SAN FRANCISCO PLANNING DEPARTMENT

## CEQA CATEGORICAL EXEMPTION FORM

PROJECT NAME: Moccasin Powerhouse Generators Rewind Project

PROJECT LOCATION: intersection of State Routes 49 & 120, Town of Moccasin, Tuolumne County

CASE NUMBER: 2014.1184E

PROJECT TYPE:  New Facility  Replacement Facility/Equipment  
 Repair/Maintenance/Upgrade  Other: \_\_\_\_\_

### 1. EXEMPTION CLASS

- Class 1: Existing Facilities
- Class 2: Replacement or Reconstruction
- Class 3: New Construction or Conversion of Small Structures
- Class 6: Information Collection
- Other: \_\_\_\_\_

### 2. CEQA Impacts

For any box checked below, refer to the attached Environmental Evaluation Application with supporting analysis and documentation.

- Air Quality: Would the project affect sensitive receptors (specifically schools, colleges, universities, day care facilities, hospitals, residential dwellings, or senior-care facilities)?
- Noise: Would the project conflict with the applicable local Noise Ordinance?
- Hazardous Materials: Would the project be located on a site included on any list compiled pursuant to Section 65962.5 of the Government Code, or impact an area with known hazardous materials such as a former gas station, auto repair, dry cleaners, heavy manufacturing use, or site with underground storage tanks?
- Soils Disturbance/Modification: Would the project result in soil disturbance greater than 2 feet below grade in archeological sensitive area or 8 feet in a non-archeological sensitive area?
- Biology: Would the project have the potential to impact sensitive species, rare plants or designated critical habitat? Is the project consistent with the applicable tree protection ordinance?



Visual: Is the project located within or adjacent to a designated scenic roadway, or would the project have the potential to impact scenic resources that are visible from public locations?

Transportation: Would project construction or operation have the potential to substantially interfere with existing traffic patterns or transit operations.

Historical Resources: Is the project located on a site with a known or potential historical resource?

Other: \_\_\_\_\_

### 3. CATEGORICAL EXEMPTION DETERMINATION

Further Environmental Review Required.

Notes: \_\_\_\_\_

No Further Environmental Review Required. Project is categorically exempt under CEQA.

**Timothy J.  
Johnston**

Digitally signed by Timothy J. Johnston  
DN: dc=org, dc=sfgov, dc=cityplanning,  
ou=CityPlanning, ou=Environmental  
Planning, cn=Timothy J. Johnston,  
email=timothy.johnston@sfgov.org  
Date: 2014.08.04 16:48:38 -07'00'

**8/4/2014**

Planner's Signature

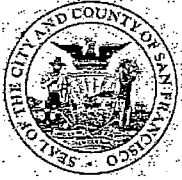
Date

**Timothy Johnston, CEQA Coordinator**

Name, Title

Project Approval Action: Public hearing to award design-build contract

Once signed and dated, this document constitutes a categorical exemption pursuant to CEQA Guidelines and Chapter 31 of the Administrative Code.



# SAN FRANCISCO PLANNING DEPARTMENT

## ENVIRONMENTAL EVALUATION APPLICATION COVER MEMO - PUBLIC PROJECTS ONLY

In accordance with Chapter 31 of the San Francisco Administrative Code, an appeal of an exemption determination can only be filed within 30 days of the project receiving the first approval action.

Please attach this memo along with all necessary materials to the Environmental Evaluation Application.

Project Address and/or Title:	SFPUC HHW&P Moccasin Powerhouse Generators Rewind Design-Build Contract
Funding Source (MTA only):	
Project Approval Action:	Approval to award the design-build contract would require a public hearing.
Will the approval action be taken at a noticed public hearing? <input checked="" type="checkbox"/> YES* <input type="checkbox"/> NO	
* If YES is checked, please see below.	

### IF APPROVAL ACTION IS TAKEN AT A NOTICED PUBLIC HEARING, INCLUDE THE FOLLOWING CALENDAR LANGUAGE:

**End of Calendar:** CEQA Appeal Rights under Chapter 31 of the San Francisco Administrative Code If the Commission approves an action identified by an exemption or negative declaration as the Approval Action (as defined in S.F. Administrative Code Chapter 31, as amended, Board of Supervisors Ordinance Number 161-13), then the CEQA decision prepared in support of that Approval Action is thereafter subject to appeal within the time frame specified in S.F. Administrative Code Section 31.16. Typically, an appeal must be filed within 30 calendar days of the Approval Action. For information on filing an appeal under Chapter 31, contact the Clerk of the Board of Supervisors at City Hall, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102, or call (415) 554-5184. If the Department's Environmental Review Officer has deemed a project to be exempt from further environmental review, an exemption determination has been prepared and can be obtained on-line at <http://sf-planning.org/index.aspx?page=3447>. Under CEQA, in a later court challenge, a litigant may be limited to raising only those issues previously raised at a hearing on the project or in written correspondence delivered to the Board of Supervisors, Planning Commission, Planning Department or other City board, commission or department at, or prior to, such hearing, or as part of the appeal hearing process on the CEQA decision.

**Individual calendar items:** This proposed action is the Approval Action as defined by S.F. Administrative Code Chapter 31.

### THE FOLLOWING MATERIALS ARE INCLUDED:

- 2 sets of plans (11x17)
- Project description
- Photos of proposed work areas/project site
- Necessary background reports (specified in EEA)
- MTA only: Synchro data for lane reductions and traffic calming projects

# APPLICATION FOR Environmental Evaluation

## 1. Owner/Applicant Information

PROPERTY OWNER'S NAME: San Francisco Public Utilities Commission Hetch Hetchy Water and Power	
PROPERTY OWNER'S ADDRESS: 525 Golden Gate Avenue, 13th Floor San Francisco, CA 94102-3220	TELEPHONE: (415) 554-3155 EMAIL: www.sfwater.org

APPLICANT'S NAME: San Francisco Public Utilities Commission Bureau of Environmental Management <span style="float: right;">Same as Above <input type="checkbox"/></span>	
APPLICANT'S ADDRESS: 525 Golden Gate Avenue, Suite 600 San Francisco, CA 94102-3220	TELEPHONE: (415) 934-5700 EMAIL: BEM@sfwater.org

CONTACT FOR PROJECT INFORMATION: Barry Pearl, AICP, MPA, Senior Environmental Project Manager <span style="float: right;">Same as Above <input type="checkbox"/></span>	
ADDRESS: 525 Golden Gate Avenue, Suite 600 San Francisco, CA 94102-3220	TELEPHONE: (415) 551-4573 EMAIL: bpearl@sfwater.org

## 2. Location and Classification

STREET ADDRESS OF PROJECT: Lakeshore Drive, Town of Moccasin, Tuolumne County	ZIP CODE: 95347
CROSS STREETS: Moccasin Switchback Road	

ASSESSOR'S BLOCK/LOT: N/A / N/A	LOT DIMENSIONS: N/A	LOT AREA (SQ FT): N/A	ZONING DISTRICT: N/A	HEIGHT/BULK DISTRICT: N/A
COMMUNITY PLAN AREA (IF ANY): N/A				

## 3. Project Description

( Please check all that apply ) <input type="checkbox"/> Change of Use <input type="checkbox"/> Change of Hours <input type="checkbox"/> New Construction <input type="checkbox"/> Alterations <input type="checkbox"/> Demolition <input checked="" type="checkbox"/> Other: Please clarify: Rewind Generators	<b>ADDITIONS TO BUILDING:</b> <input type="checkbox"/> Rear <input type="checkbox"/> Front <input type="checkbox"/> Height <input type="checkbox"/> Side Yard	<b>PRESENT OR PREVIOUS USE:</b> SFPUC Power Enterprise Moccasin Powerhouse
	<b>PROPOSED USE:</b> SFPUC Power Enterprise Moccasin Powerhouse	
	<b>BUILDING APPLICATION PERMIT NO.:</b> N/A	<b>DATE FILED:</b> N/A

#### 4. Project Summary Table

If you are not sure of the eventual size of the project, provide the maximum estimates.

	EXISTING USES	EXISTING USES TO BE RETAINED	NET NEW CONSTRUCTION AND/OR ADDITION	PROJECT TOTALS
<b>PROJECT FEATURES</b>				
Dwelling Units	N/A	N/A	N/A	N/A
Hotel Rooms	N/A	N/A	N/A	N/A
Parking Spaces	N/A	N/A	N/A	N/A
Loading Spaces	N/A	N/A	N/A	N/A
Number of Buildings	One	One	N/A	One
Height of Building (s)	~30 feet	~30 feet	N/A	~30 feet
Number of Stories	One	One	N/A	One
Bicycle Spaces	N/A	N/A	N/A	N/A
<b>GROSS SQUARE FOOTAGE (GSF)</b>				
Residential	N/A	N/A	N/A	N/A
Retail	N/A	N/A	N/A	N/A
Office	N/A	N/A	N/A	N/A
Industrial	N/A	N/A	N/A	N/A
PDR Production, Distribution, & Repair	N/A	N/A	N/A	N/A
Parking	N/A	N/A	N/A	N/A
Other (Specify Use)	Utility ~15,230	~15,230	N/A	~15,230
<b>TOTAL GSF</b>	~15,230	~15,230	N/A	~15,230

Please provide a narrative project description that summarizes the project and its purpose or describe any additional features that are not included in this table. Please list any special authorizations or changes to the Planning Code or Zoning Maps if applicable.

The Powerhouse was completed in 1969 and measures 98 feet by 158 feet. The concrete and steel structure is located on Lakeshore Drive in the Town of Moccasin. Adjacent to the Powerhouse is a Control Building measuring 26.5 feet by 69 feet, also built of reinforced concrete. A photograph of the Powerhouse is attached. The Powerhouse contains two vertical shaft turbines, each rated 71,500 horsepower (hp) and two generators, each rated 50,000/57,500 kilovolt amperes (kVA) (SFPUC Data Book Revised 1994). The Powerhouse generates 540 million kilowatt hours annually on average.

Rehabilitation of the two generators would ensure reliable operation and power generation to continue to supply electric power to facilities of the City and County of San Francisco including the Municipal Railway System, San Francisco International Airport, the San Francisco Unified School District, and municipal buildings including City Hall.

The SFPUC proposes award of a design-build contract to replace the Generator No.1 and No.2 stator core and coils to uprate each generator from 57.5 MegaVoltAmps (MVA) to a new rating of 61 MVA. Also the project would involve rehabilitation of the rotor field poles (with new pole cores and re-insulated field coils); replacement of the rotor pole/rim tail connection system with a new T-tail connection system, and supply of a new rotor rim for each generator following inspection and testing.

Since their original installation, the generators have not had any major maintenance work done (no rewinds or overhauls).

5. Environmental Evaluation Project Information

1. Would the project involve a major alteration of a structure constructed 45 or more years ago or a structure in a historic district?  YES  NO

If yes, submit the *Supplemental Information for Historic Resource Evaluation* application.

2. Would the project involve demolition of a structure constructed 45 or more years ago or a structure located in a historic district?  YES  NO

If yes, a historic resource evaluation (HRE) report will be required. The scope of the HRE will be determined in consultation with Preservation Planning staff.

3. Would the project result in excavation or soil disturbance/modification?  YES  NO

If yes, please provide the following:

Depth of excavation/disturbance below grade (in feet): \_\_\_\_\_

Area of excavation/disturbance (in square feet): \_\_\_\_\_

Amount of excavation (in cubic yards): \_\_\_\_\_

Type of foundation to be used (if known) and/or other information regarding excavation or soil disturbance/modification:

*Note: A geotechnical report prepared by a qualified professional must be submitted if one of the following thresholds apply to the project:*

- The project involves a lot split located on a slope equal to or greater than 20 percent.
- The project is located in a seismic hazard landslide zone or on a lot with a slope average equal to or greater than 20 percent and involves either
  - excavation of 50 or more cubic yards of soil, or
  - building expansion greater than 1,000 square feet outside of the existing building footprint.

A geotechnical report may also be required for other circumstances as determined by Environmental Planning staff.

4. Would the project involve any of the following: (1) construction of a new building, (2) relocation of an existing building, (3) addition of a new dwelling unit, (4) addition of a garage or parking space, (5) addition of 20 percent or more of an existing building's gross floor area, or (6) paving or repaving of 200 or more square feet of an existing building's front setback?  YES  NO

If yes, please submit a *Tree Planting and Protection Checklist*.

5. Would the project result in any construction over 40 feet in height?  YES  NO

If yes, please submit a *Shadow Analysis Application*. This application should be filed at the PIC and should not be included with the Environmental Evaluation Application. (If the project already underwent Preliminary Project Assessment, this application may not be needed. Please refer to the shadow discussion in the PPA letter.)

6. Would the project result in a construction of a structure 80 feet or higher?  YES  NO

If yes, an initial review by a wind expert, including a recommendation as to whether a wind analysis is needed, may be required, as determined by Planning staff. (If the project already underwent Preliminary Project Assessment, please refer to the wind discussion in the PPA letter.)

7. Would the project involve work on a site with an existing or former gas station, auto repair, dry cleaners, or heavy manufacturing use, or a site with underground storage tanks?  YES  NO

If yes, please submit a Phase I Environmental Site Assessment (ESA) prepared by a qualified consultant. If the project is subject to Health Code Article 22A, Planning staff will refer the project sponsor to the Department of Public Health for enrollment in DPH's Maher program.

8. Would the project require any variances, special authorizations, or changes to the Planning Code or Zoning Maps?  YES  NO

If yes, please describe.

9. Is the project related to a larger project, series of projects, or program?  YES  NO

If yes, please describe.

# Estimated Construction Costs

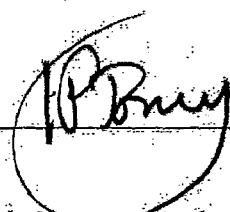
TYPE OF APPLICATION: N/A	
OCCUPANCY CLASSIFICATION: Group U	
BUILDING TYPE: Type I	
TOTAL GROSS SQUARE FEET OF CONSTRUCTION:  15,230	BY PROPOSED USES: Electric Utility Powerhouse
ESTIMATED CONSTRUCTION COST: N/A	
ESTIMATE PREPARED BY:	
FEE ESTABLISHED:	

## Applicant's Affidavit

Under penalty of perjury the following declarations are made:

- a: The undersigned is the owner or authorized agent of the owner of this property.
- b: The information presented is true and correct to the best of my knowledge.
- c: Other information or applications may be required.

Signature: \_\_\_\_\_



Date: 07/21/2014

Print name, and indicate whether owner, or authorized agent:

Irina P. Torrey, AICP, Bureau Manager

Owner / Authorized Agent (circle one)

# Environmental Evaluation Application Submittal Checklist

APPLICATION MATERIALS	PROVIDED	NOT APPLICABLE
Two originals of this application signed by owner or agent, with all blanks filled in.	<input type="checkbox"/>	
Two hard copy sets of project drawings in 11" x 17" format showing existing and proposed site plans with structures on the subject property and on immediately adjoining properties, and existing and proposed floor plans, elevations, and sections of the proposed project.	<input type="checkbox"/>	
One CD containing the application and project drawings and any other submittal materials that are available electronically. (e.g., geotechnical report)	<input type="checkbox"/>	
Photos of the project site and its immediate vicinity, with viewpoints labeled.	<input type="checkbox"/>	
Check payable to San Francisco Planning Department.	<input type="checkbox"/>	
Letter of authorization for agent.	<input type="checkbox"/>	<input type="checkbox"/>
<i>Supplemental Information for Historic Resource Evaluation</i> , as indicated in Part 5 Question 1.	<input type="checkbox"/>	<input type="checkbox"/>
<i>Historic Resource Evaluation</i> , as indicated in Part 5 Question 2.	<input type="checkbox"/>	<input type="checkbox"/>
Geotechnical report, as indicated in Part 5 Question 3.	<input type="checkbox"/>	<input type="checkbox"/>
<i>Tree Planting and Protection Checklist</i> , as indicated in Part 5 Question 4.	<input type="checkbox"/>	<input type="checkbox"/>
Phase I Environmental Site Assessment, as indicated in Part 5 Question 7.	<input type="checkbox"/>	<input type="checkbox"/>
Additional studies (list).	<input type="checkbox"/>	<input type="checkbox"/>

For Department Use Only

Application received by Planning Department

By: \_\_\_\_\_

Date: \_\_\_\_\_



SAN FRANCISCO  
PLANNING  
DEPARTMENT

### FOR MORE INFORMATION:

Call or visit the San Francisco Planning Department

**Central Reception**  
1650 Mission Street, Suite 400  
San Francisco CA 94103-2479

TEL: 415.558.6378  
FAX: 415.558.6409  
WEB: <http://www.sfplanning.org>

**Planning Information Center (PIC)**  
1650 Mission Street, First Floor  
San Francisco CA 94103-2479

TEL: 415.558.6377  
*Planning staff are available by phone and at the PIC counter.  
No appointment is necessary.*





San Francisco  
Water Power Sewer

Operator of the Hetch Hetchy Regional Water System

Bureau of Environmental Management  
525 Golden Gate Avenue, 6<sup>th</sup> Floor  
San Francisco, CA 94102  
T 415.934-5700  
F 415.934-5750

July 28, 2014

Chris Kern, Senior Environmental Planner  
Environmental Planning Division  
San Francisco Planning Department  
1650 Mission Street, Suite 400  
San Francisco, CA 94103

RE: SFPUC Power Enterprise  
Moccasin Powerhouse Generators  
Rewind Project  
Town of Moccasin,  
Tuolumne County  
CEQA Exemption Request  
Design-Build Contract Number 121

Dear Chris:

The San Francisco Public Utilities Commission (SFPUC) requests review of the proposed Moccasin Powerhouse Generators Rewind Project (Project) under the California Environmental Quality Act (CEQA). The purposes of this letter are to (1) provide the Environmental Planning Division (EP) with a detailed description of the Project, and (2) request EP concurrence that the proposed Project is categorically exempt under CEQA Guidelines Section 15301, Class 1. Class 1, Subsection (b) provides an exemption for "Existing facilities of both investor and publicly-owned utilities used to provide *electric power*, natural gas, sewerage or other public utility services" (emphasis added) involving negligible or no expansion of an existing use.

The following describes the proposed Project, illustrates the proposed Project would not result in any significant adverse environmental impacts, and provides support for our recommendation that the Project is categorically exempt from CEQA review.

Described below is information, which summarizes the proposed Project. Environmental information is also presented and CEQA compliance is addressed.

Edwin M. Lee  
Mayor

Vince Courtney  
President

Ann Moller Caen  
Vice President

Francesca Vietor  
Commissioner

Anson Moran  
Commissioner

Art Torres  
Commissioner

Harlan L. Kelly, Jr.  
General Manager



Chris Kern, Senior Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
SFPUC Power Enterprise Moccasin Powerhouse Generators Rewind Project  
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Page 2

## **BACKGROUND**

The Moccasin Powerhouse is located in the Town of Moccasin in western Tuolumne County at the intersection of State Routes 49 and 120 (37°48'31.71"N and 120°17'57.12"N)

The Powerhouse was completed in 1969 and measures 98 feet by 158 feet. The concrete and steel structure is located on Lakeshore Drive in the Town of Moccasin. Adjacent to the Powerhouse is a Control Building measuring 26.5 feet by 69 feet, also built of reinforced concrete. A photograph of the Powerhouse is attached.

The Powerhouse contains two vertical shaft turbines, each rated 71,500 horsepower (hp) and two generators, each rated 50,000/57,500 kilovolt amperes (kVA) (SFPUC Data Book Revised 1994). The Powerhouse generates 540 million kilowatt hours annually on average.

Rehabilitation of the two generators would ensure reliable operation and power generation to continue to supply electric power to facilities of the City and County of San Francisco including the Municipal Railway System, San Francisco International Airport, the San Francisco Unified School District, and municipal buildings including City Hall.

## **PROJECT DESCRIPTION**

The SFPUC proposes award of a design-build contract to replace the Generator No. 1 and No. 2 stator core and coils to uprate each generator from 57.5 MegaVoltAmps (MVA) to a new rating of 61 MVA. Also the project would involve rehabilitation of the rotor field poles (with new pole cores and re-insulated field coils), replacement of the rotor pole/rim tail connection system with a new T-tail connection system, and supply of a new rotor rim for each generator following inspection and testing.

Since their original installation, the generators have not had any major maintenance work done (no rewinds or overhauls).

Work would be conducted on each generator sequentially so that one generator would be in service during the contract duration.

Chris Kern, Senior Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
SFPUC Power Enterprise Moccasin Powerhouse Generators Rewind Project  
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Rehabilitation of the generators would not expand the Powerhouse building. Replacement of existing materials with new materials would improve the efficiency of generators. Less stray current would be lost in the new core and more copper would be contained in the winding due to new improved insulation. The new design would also improve efficiency. At the present time, until the rewound generators are in use and tested, it is uncertain whether additional power can be generated as a result of the proposed Rewind Project.

#### **Project Duration and Schedule**

Total duration of the proposed design-build contract is 1,040 days or approximately 2 years and 10 months. Contract duration would include both design and construction so work on the Project site would be less than the 1,040 calendar days. Work would be conducted during normal construction hours, 7:00 am to 5:00 pm, Monday through Friday.

Evening and weekend work is not anticipated.

#### **Project Equipment**

The following equipment would be used during the generators renovation project:

- Welding equipment - work to be performed inside the Powerhouse
- Brazing Machine - Internal work.
- 5 Ton Mobile Crane - to place the rotor poles on the rotors
- Flatbed trucks to deliver equipment and materials
- 8 each Work Trucks ¾ Ton, transportation for work crew only.
- Table Saw
- Hi-pot test set
- Band Saw
- Table Sander
- Hand tools
- Angle grinders, drills

#### **Site Access and Staging**

Access to and from the Project site would be over State Route 120 and Moccasin Switchback Road. Vehicles and equipment used for the generators renovation would be staged on a site adjacent to the "Old Moccasin

Chris Kern, Senior Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
SFPUC Power Enterprise Moccasin Powerhouse Generators Rewind Project  
CEQA Exemption Request  
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Powerhouse\* adjacent to the Project site. See attached site plan. The staging area is identified on the site plan as the "Contractors Laydown Area".

Equipment and debris removed from the Powerhouse would either be recycled or disposed of according to the provisions of the San Francisco Construction and Demolition Debris Ordinance.

### **SFPUC Standard Construction Measures**

The SFPUC requires the Standard Construction Measures issued February 7, 2007 (on file at EP) be implemented, as applicable, for all of its projects. These measures would be applied to this Project as well.

### **ENVIRONMENTAL INFORMATION**

#### *Aesthetics*

The proposed Rewind Project would not alter the appearance of the existing Powerhouse which is compatible with other structures in the Moccasin Corporation Yard. While the generators are exposed on the roof of the Powerhouse (see attached photograph), the appearance of the generators would remain the same when the Project is complete. The Powerhouse is visible from State Route 49 on the west side of Moccasin Reservoir. The white color of the generators would not be changed as the result of completion of the proposed Project.

Therefore adverse effects to the visual environment are not anticipated.

#### *Air Quality*

Emissions of dust and air pollutants during Project activity are expected to be minimal given the confined nature of the Project and limited use of construction equipment and transport vehicles. No ground-disturbing activities are proposed.

A limited number of truck trips is anticipated to transport the equipment and materials to and from the Project site. While equipment such as grinders, sanders and brazing equipment would be used during the Rewind Project, particles generated by these hand tools should be larger in size and should generally be confined to the specific area of the Powerhouse and the

Chris Kern, Senior Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
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Contractor's Laydown Area and should not be windblown toward residences in the Town of Moccasin.

Based upon implementation of Standard Construction Measure Number 3 to control dust, adverse effects on air quality are not anticipated.

#### *Biological Resources*

As indicated above, the proposed Rewind Project would not require any ground-disturbing activities. Nor would the Rewind Project require removal or trimming trees or other landscaping. The Contractor's Laydown Area is a paved area currently used for open equipment storage.

It is not anticipated the proposed Rewind Project would disturb nesting birds in trees in the surrounding area or bat species in the Project vicinity, if present.

Therefore adverse effects to biological resources are not anticipated.

#### *Archaeological Resources and Historical Resources*

As indicated in the Project Description above, the Moccasin Powerhouse was constructed in 1969 and is therefore 45 years old. Structures must be at least 50 years old to qualify for potential listing on the National Register of Historic Places or the California Register of Historical Resources.

None of the facilities within the Town of Moccasin have been identified as a historic resource by Tuolumne County.

A Historic Resource Evaluation Report was prepared by VerPlanck Historic Preservation Consulting dated August 23, 2012 for the SFPUC for the Moccasin Facilities Upgrade Project (Planning Department Case Number 2011.0835E). A copy of the Final Report is on file at the Environmental Planning Division. The Final Historic Resource Evaluation Report identified a proposed Historic District (See Figure 58, Page 63 of the Final Report.) which excluded the Powerhouse from the proposed Historic District boundary.

The "Old" Powerhouse, constructed between 1923 and 1925, adjacent to the "New" Powerhouse was determined both individually eligible for listing on the National Register of Historic Places and a contributory building to the proposed

Chris Kern, Senior Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
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Moccasin Historic District. The proposed Rewind Project would not affect the "Old" Powerhouse building.

As indicated in the Project Description, the proposed Contractor's Laydown Area would be located in the paved equipment storage area adjacent to the "Old" Powerhouse. The proposed Laydown Area is located within the boundary of the Proposed Historic District. In order to avoid any potential damage to the exterior (east) side of the "Old" Powerhouse, a row of "K" rails would be placed between the Powerhouse and the Contractor's Laydown Area. Temporary use of the Contractor's Laydown Area would not alter the paved area nor would it compromise future designation of the Historic District.

Therefore adverse effects to archeological and historic resources are not anticipated.

#### *Hazards and Hazardous Materials*

State Water Resources Control Board (SWRCB) Geotracker and State Department of Toxic Substances Control (DTSC) Geostor databases were reviewed by SFPUC staff. No leaking underground (fuel) storage tank (LUST) cleanup sites, Spills, Leaks, Investigations and Cleanup (SLIC), Land Disposal, Department of Defense Non-Underground Storage Tank (DOD Non-UST), DTSC Hazardous Waste and Substances Site List (Cortese List), or Underground Storage Tank (UST) sites were identified on or in the vicinity of the Project site.

Contract technical specifications would ensure that metal debris generated during the sanding and grinding processes would be captured and disposed of or recycled according to applicable local, State and federal regulations.

The construction contractor would be required to maintain a spill kit on site in the event fuels (gasoline or diesel) or lubricants are spilled during Project activity.

Therefore, adverse effects related to potential exposure of construction workers or the public to hazardous materials are not anticipated.

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### *Noise*

The nearest residences to the Powerhouse within the town of Moccasin are approximately 570 feet north and 830 feet east. The "Old" Powerhouse is located between the "New" Powerhouse and the residences to the north. A number of maintenance buildings are located between the "New" Powerhouse and the nearest residence to the east.

Tuolumne County has not adopted a noise control ordinance to regulate construction noise. Weekend and evening work is not anticipated but may be necessary. The distance from the Powerhouse to the nearest receptors should minimize construction noise audible to residents.

Therefore, adverse noise effects are not anticipated.

### *Recreation*

The Moccasin Corporation Yard in the area around the Powerhouse is not open to the public therefore recreational activity on the Powerhouse site does not occur. Because the Generators Rewind Project construction and staging would be confined within the Corporation Yard, recreation use of nearby Town of Moccasin facilities (open to SFPUC employees and their families only) would not be disrupted. Therefore, adverse effects to recreational activities are not anticipated.

### *Transportation*

Traffic generated by the Project would be limited to workers commuting to and from the Project site and movement of vehicles and equipment needed to rewind the generators.

The limited duration and number of construction vehicles using State Highway 120, Moccasin Switchback Road and Lakeshore Drive should not delay other vehicles using these roads. Equipment and vehicles would be parked on the "Contractor's Laydown Area" and would not impinge on existing on-street parking within the Town of Moccasin.

No designated bicycle routes or bicycle paths are located in the Town of Moccasin.

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Therefore, adverse effects to transportation or parking on roads in the Project vicinity are not anticipated.

*Water Quality*

No waters of the United States or waters of the State are located within the Powerhouse area.

As indicated in the description of Hazards and Hazardous Materials above, contract technical specifications would ensure that metal debris generated during the sanding and grinding processes would be captured and disposed of or recycled according to applicable local, State and federal regulations in order to prevent potential contamination of the adjacent Moccasin Reservoir.

Therefore, adverse effects to water quality are not anticipated.

**CEQA Compliance/Recommendation**

The SFPUC recommends the proposed Moccasin Powerhouse Generators Rewind Project be classified as categorically exempt under CEQA Guidelines Section 15301 (Existing Facilities).

If you have any questions regarding the proposed Project, please contact Barry Pearl, Senior Environmental Project Manager, at (415) 551-4573.

Sincerely,



Irina P. Torrey, AICP, Manager  
Bureau of Environmental Management

Attachments: Photograph, Moccasin Powerhouse;

Google Earth Image of Moccasin Powerhouse from State  
Highway 49, Facing East, [Accessed July 17, 2014]

Referenced: Moccasin Facilities Upgrade Project, Final Historic Resource  
Evaluation Report, Prepared for the SFPUC by VerPlanck  
Historic Preservation Consulting, Dated August 23, 2012,  
On File at the Environmental Planning Division.



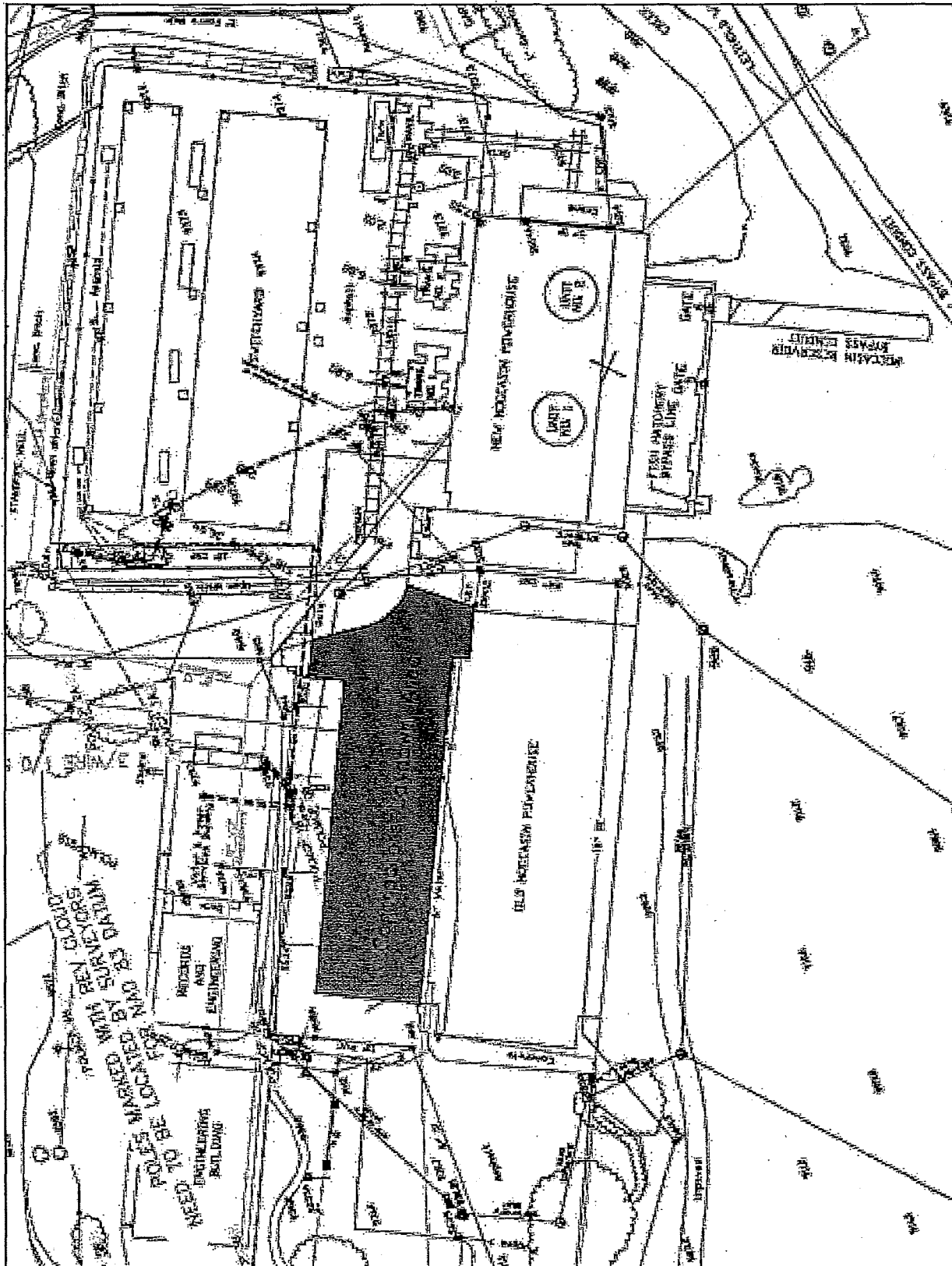
Chris Kern, Senior Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
SFPUC Power Enterprise Moccasin Powerhouse Generators Rewind Project  
CEQA Exemption Request

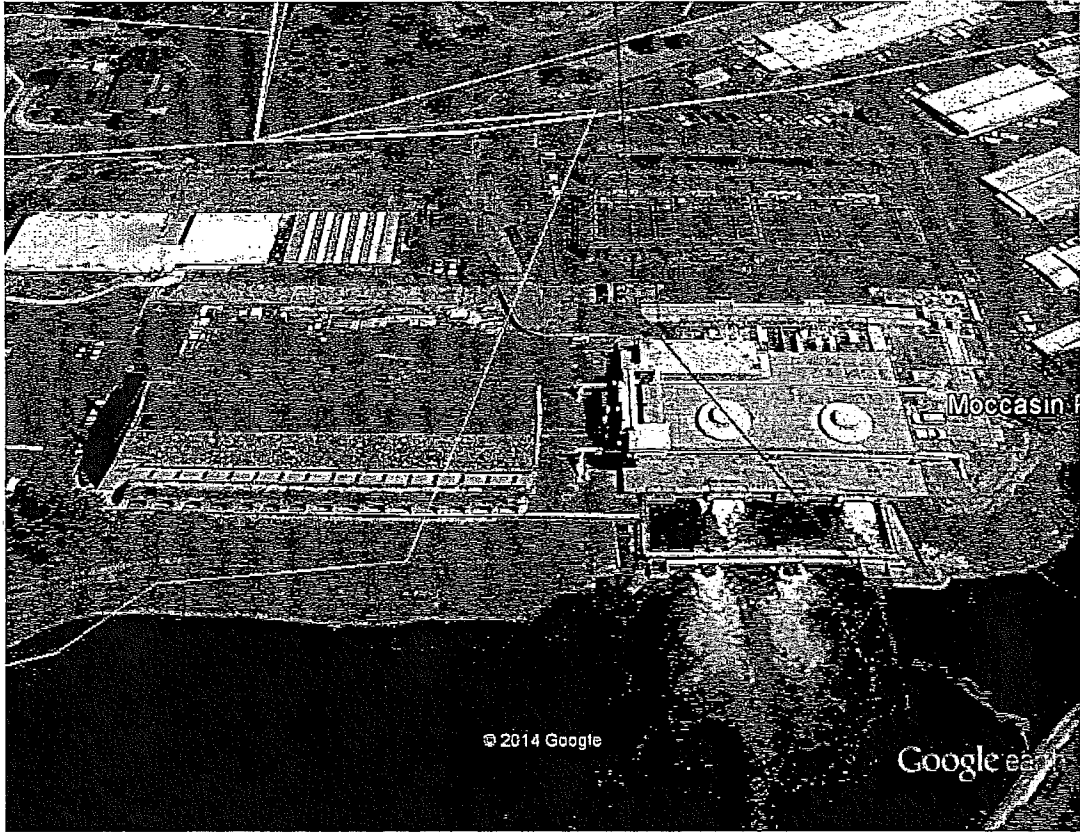
July 28, 2014

Page 9

Cc: Tim Parkan, Mechanical Engineer, HHWP  
Julianne Dettman, Management Assistant, HHWP  
Peter Dean, Regulatory Specialist, NRLMD  
Sally Morgan, RPA, Bureau of Environmental Management  
Barry Pearl, AICP, MPA, Bureau of Environmental Management

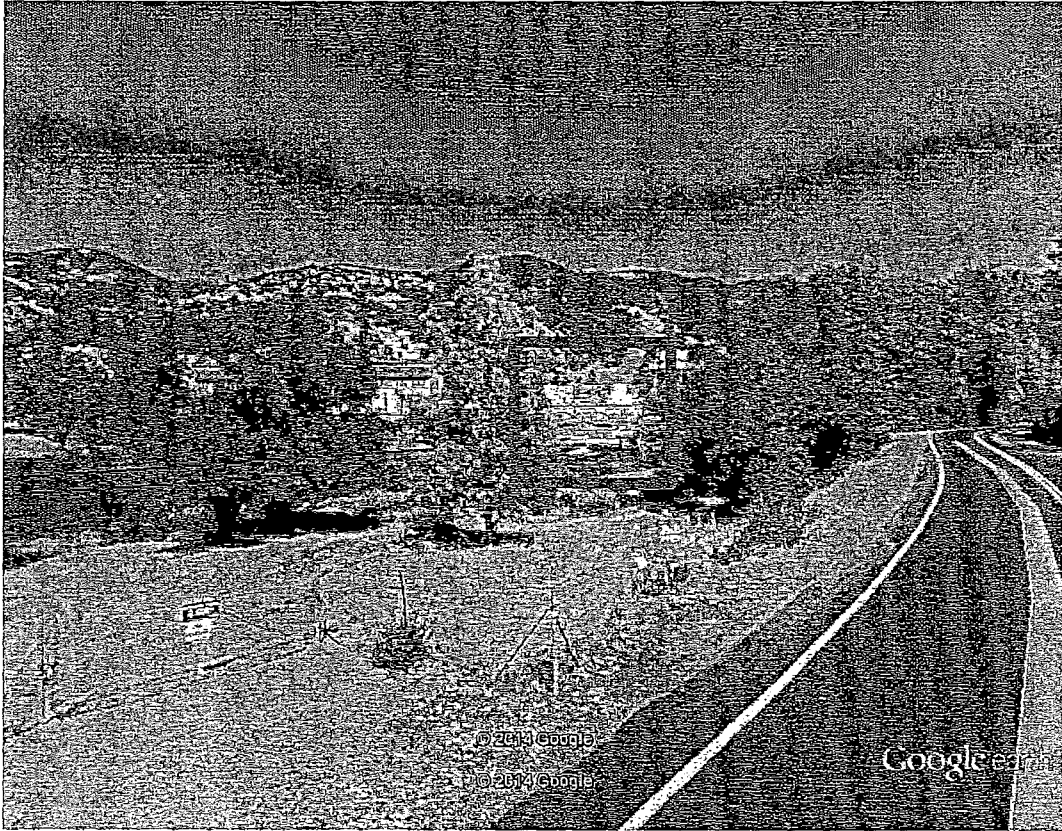






Moccasin Powerhouse and Contractor's Laydown Area  
Aerial View

"Old" Powerhouse and Contractor's Laydown Area on the left of the image  
"New" Powerhouse on the right of the image  
Google Earth Image July 17, 2014



View from State Highway 49 facing Southeast  
Powerhouse in Center of Image  
Google Earth Image Dated July 17, 2014



# SAN FRANCISCO PLANNING DEPARTMENT

## CEQA CATEGORICAL EXEMPTION FORM

PROJECT NAME: Don Pedro Reservoir Electrical Transmission Line Crossing

PROJECT LOCATION: Don Pedro Reservoir, Tuolumne County

CASE NUMBER: 2014-002073ENV

PROJECT TYPE:  New Facility  Replacement Facility/Equipment  
 Repair/Maintenance/Upgrade  Other: \_\_\_\_\_

### 1. EXEMPTION CLASS

- Class 1: Existing Facilities
- Class 2: Replacement or Reconstruction
- Class 3: New Construction or Conversion of Small Structures
- Class 6: Information Collection
- Other: \_\_\_\_\_

### 2. CEQA Impacts

For any box checked below, refer to the attached Environmental Evaluation Application with supporting analysis and documentation.

- Air Quality: Would the project affect sensitive receptors (specifically schools, colleges, universities, day care facilities, hospitals, residential dwellings, or senior-care facilities)?
- Noise: Would the project conflict with the applicable local Noise Ordinance?
- Hazardous Materials: Would the project be located on a site included on any list compiled pursuant to Section 65962.5 of the Government Code, or impact an area with known hazardous materials such as a former gas station, auto repair, dry cleaners, heavy manufacturing use, or site with underground storage tanks?
- Soils Disturbance/Modification: Would the project result in soil disturbance greater than 2 feet below grade in archeological sensitive area or 8 feet in a non-archeological sensitive area?
- Biology: Would the project have the potential to impact sensitive species, rare plants or designated critical habitat? Is the project consistent with the applicable tree protection ordinance?

Visual: Is the project located within or adjacent to a designated scenic roadway, or would the project have the potential to impact scenic resources that are visible from public locations?

Transportation: Would project construction or operation have the potential to substantially interfere with existing traffic patterns or transit operations.

Historical Resources: Is the project located on a site with a known or potential historical resource?

Other: \_\_\_\_\_

### 3. CATEGORICAL EXEMPTION DETERMINATION

Further Environmental Review Required.

Notes: \_\_\_\_\_

No Further Environmental Review Required. Project is categorically exempt under CEQA.



Digitally signed by Chris Kern  
DN: dc=org, dc=sfgov, dc=cityplanning,  
ou=CityPlanning, ou=Environmental  
Planning, cn=Chris Kern,  
email=chris.kern@sfgov.org  
Date: 2014.11.25 13:43:45 -08'00'

Planner's Signature

11/25/14

Date

Chris Kern, Senior Environmental Planner

Name, Title

Project Approval Action: Approval to award construction contract

Once signed and dated, this document constitutes a categorical exemption pursuant to CEQA Guidelines and Chapter 31 of the Administrative Code.



# SAN FRANCISCO PLANNING DEPARTMENT

## ENVIRONMENTAL EVALUATION APPLICATION COVER MEMO - PUBLIC PROJECTS ONLY

In accordance with Chapter 31 of the San Francisco Administrative Code, an appeal of an exemption determination can only be filed within 30 days of the project receiving the first approval action.

Please attach this memo along with all necessary materials to the Environmental Evaluation Application.

<b>Project Address and/or Title:</b>	SFPUC HHWP Don Pedro Reservoir Electric Transmission Line Crossing (HH-960)
<b>Funding Source (MTA only):</b>	
<b>Project Approval Action:</b>	Approval to award the construction contract would require a public hearing.
<b>Will the approval action be taken at a noticed public hearing?</b>	<input checked="" type="checkbox"/> YES* <input type="checkbox"/> NO
* If YES is checked, please see below.	

### IF APPROVAL ACTION IS TAKEN AT A NOTICED PUBLIC HEARING, INCLUDE THE FOLLOWING CALENDAR LANGUAGE:

**End of Calendar:** CEQA Appeal Rights under Chapter 31 of the San Francisco Administrative Code If the Commission approves an action identified by an exemption or negative declaration as the Approval Action (as defined in S.F. Administrative Code Chapter 31, as amended, Board of Supervisors Ordinance Number 161-13), then the CEQA decision prepared in support of that Approval Action is thereafter subject to appeal within the time frame specified in S.F. Administrative Code Section 31.16. Typically, an appeal must be filed within 30 calendar days of the Approval Action. For information on filing an appeal under Chapter 31, contact the Clerk of the Board of Supervisors at City Hall, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102, or call (415) 554-5184. If the Department's Environmental Review Officer has deemed a project to be exempt from further environmental review, an exemption determination has been prepared and can be obtained on-line at <http://sf-planning.org/index.aspx?page=3447>. Under CEQA, in a later court challenge, a litigant may be limited to raising only those issues previously raised at a hearing on the project or in written correspondence delivered to the Board of Supervisors, Planning Commission, Planning Department or other City board, commission or department at, or prior to, such hearing, or as part of the appeal hearing process on the CEQA decision.

**Individual calendar items:** This proposed action is the Approval Action as defined by S.F. Administrative Code Chapter 31.

### THE FOLLOWING MATERIALS ARE INCLUDED:

- 2 sets of plans (11x17)
- Project description
- Photos of proposed work areas/project site
- Necessary background reports (specified in EEA)
- MTA only: Synchro data for lane reductions and traffic calming projects



# APPLICATION FOR Environmental Evaluation

## 1. Owner/Applicant Information

PROPERTY OWNER'S NAME: San Francisco Public Utilities Commission, Hetch Hetch Water and Power	
PROPERTY OWNER'S ADDRESS: 525 Golden Gate Avenue, 13th Floor San Francisco, CA 94102-3220	TELEPHONE: ( 415 ) 554-3155 EMAIL: www.sfwater.org

APPLICANT'S NAME: San Francisco Public Utilities Commission, Bureau of Environmental Management <span style="float: right;">Same as Above <input type="checkbox"/></span>	
APPLICANT'S ADDRESS: 525 Golden Gate Avenue, Sixth Floor San Francisco, CA 94102-3220	TELEPHONE: ( 415 ) 934-5700 EMAIL: BEM@sfwater.org

CONTACT FOR PROJECT INFORMATION: Barry Pearl, AICP, MPA, Senior Environmental Project Manager <span style="float: right;">Same as Above <input type="checkbox"/></span>	
ADDRESS: 525 Golden Gate Avenue, Sixth Floor San Francisco, CA 94102-3220	TELEPHONE: ( 415 ) 551-4573 EMAIL: bpearl@sfwater.org

## 2. Location and Classification

STREET ADDRESS OF PROJECT: N/A	ZIP CODE: 95329
CROSS STREETS: N/A	

ASSESSORS BLOCK/LDT: N/A /	LOT DIMENSIONS:	LOT AREA (SQ. FT.):	ZONING DISTRICT:	HEIGHT/BULK DISTRICT:
COMMUNITY PLAN AREA (IF ANY):				

## 3. Project Description

(Please check all that apply) <input type="checkbox"/> Change of Use <input type="checkbox"/> Change of Hours <input type="checkbox"/> New Construction <input type="checkbox"/> Alterations <input type="checkbox"/> Demolition <input checked="" type="checkbox"/> Other Please clarify: Electric Transmission Towers	ADDITIONS TO BUILDING: <input type="checkbox"/> Rear <input type="checkbox"/> Front <input type="checkbox"/> Height <input type="checkbox"/> Side Yard	PRESENT OR PREVIOUS USE: Hetch Hetchy Electric Transmission System
		PROPOSED USE: Hetch Hetchy Electric Transmission System
		BUILDING APPLICATION PERMIT NO.: N/A
		DATE FILED:

4. Project Summary Table

If you are not sure of the eventual size of the project, provide the maximum estimates.

	EXISTING USES:	EXISTING USES TO BE RETAINED:	NET NEW CONSTRUCTION AND/OR ADDITION:	PROJECT TOTALS:
<b>PROJECT FEATURES</b>				
Dwelling Units	N/A	N/A	N/A	N/A
Hotel Rooms	N/A	N/A	N/A	N/A
Parking Spaces	N/A	N/A	N/A	N/A
Loading Spaces	N/A	N/A	N/A	N/A
Number of Buildings	N/A	N/A	N/A	N/A
Height of Building(s)	N/A	N/A	N/A	N/A
Number of Stories	N/A	N/A	N/A	N/A
Bicycle Spaces	N/A	N/A	N/A	N/A
<b>GROSS SQUARE FOOTAGE (GSF)</b>				
Residential	N/A	N/A	N/A	N/A
Retail	N/A	N/A	N/A	N/A
Office	N/A	N/A	N/A	N/A
Industrial	N/A	N/A	N/A	N/A
PDR <small>(Production, Distribution, &amp; Repair)</small>	N/A	N/A	N/A	N/A
Parking	N/A	N/A	N/A	N/A
Other (Specify Use)	N/A	N/A	N/A	N/A
<b>TOTAL GSF</b>	N/A	N/A	N/A	N/A
<p>Please provide a narrative project description that summarizes the project and its purpose or describe any additional features that are not included in this table. Please list any special authorizations or changes to the Planning Code or Zoning Maps if applicable.</p> <p>Four electric transmission lines operated and maintained by the SFPUC Power Enterprise that cross Don Pedro Reservoir in Tuolumne County do not meet the minimum clearance above the water level required by the National Electrical Safety Code (NESC) and the California Public Utilities Commission General Order Number 95 (dated January 2006) (See Basis of Design Memorandum prepared for the SFPUC Hetch Hetchy Water and Power by Black &amp; Veatch, dated November 5, 2013). The four electric transmission lines (Newark Line – Circuits 3 and 4, and the Intake-Warnerville Line – Circuits 5 and 6) between Towers 58N and 64N and 258S and 264S must be raised to meet the minimum standards.</p> <p>The proposed Project would involve construction of four steel monopoles, either 175 feet tall (replacement for towers 58N and 64N) or 180 feet tall (replacement for towers 258S and 264S) to replace the existing lattice style towers, which are 105 to 110 feet tall above grade. The monopoles would taper from bottom to top with a base diameter of approximately eight feet and 2-1/2 to 3 foot diameter at the top. See attached design drawings. Once the transmission lines are restrung from the existing towers to the replacement towers the existing lattice towers would be disassembled and removed.</p> <p>Drilled piers 12 feet in diameter embedded 29 feet into the ground would support each monopole (See drawing S-9020, Drilled Pier Foundations). Although not anticipated, depending on the nature of the substrate limited blasting may be necessary to excavate the foundations for the monopoles.</p> <p>Historic Resource Evaluation (Item 2) not required because transmission line towers are similar to hundreds in existence. Shadow Analysis (Item 5) and Wind Analysis (Item 6) not required because project is located in Tuolumne County not within San Francisco City Limits.</p>				

5. Environmental Evaluation Project Information

1. Would the project involve a major alteration of a structure constructed 45 or more years ago or a structure in a historic district?  YES  NO

If yes, submit the *Supplemental Information for Historic Resource Evaluation* application.

2. Would the project involve demolition of a structure constructed 45 or more years ago or a structure located in a historic district?  YES  NO

If yes, a historic resource evaluation (HRE) report will be required. The scope of the HRE will be determined in consultation with Preservation Planning staff.

3. Would the project result in excavation or soil disturbance/modification?  YES  NO

If yes, please provide the following:

Depth of excavation/disturbance below grade (in feet): 29 feet

Area of excavation/disturbance (in square feet): ~452

Amount of excavation (in cubic yards): ~486

Type of foundation to be used (if known) and/or other information regarding excavation or soil disturbance/modification:

Drilled piles/piers

*Note: A geotechnical report prepared by a qualified professional must be submitted if one of the following thresholds apply to the project:*

- The project involves a lot split located on a slope equal to or greater than 20 percent.
- The project is located in a seismic hazard landslide zone or on a lot with a slope average equal to or greater than 20 percent and involves either:
  - excavation of 50 or more cubic yards of soil, or
  - building expansion greater than 1,000 square feet outside of the existing building footprint.

A geotechnical report may also be required for other circumstances as determined by Environmental Planning staff.

4. Would the project involve any of the following: (1) construction of a new building, (2) relocation of an existing building, (3) addition of a new dwelling unit, (4) addition of a garage or parking space, (5) addition of 20 percent or more of an existing building's gross floor area, or (6) paving or repaving of 200 or more square feet of an existing building's front setback?  YES  NO

If yes, please submit a *Tree Planting and Protection Checklist*.

5. Would the project result in any construction over 40 feet in height?  YES  NO

If yes, please submit a *Shadow Analysis Application*. This application should be filed at the PIC and should not be included with the Environmental Evaluation Application. (If the project already underwent Preliminary Project Assessment, this application may not be needed. Please refer to the shadow discussion in the PPA letter.)

6. Would the project result in a construction of a structure 80 feet or higher?  YES  NO

If yes, an initial review by a wind expert, including a recommendation as to whether a wind analysis is needed, may be required, as determined by Planning staff. (If the project already underwent Preliminary Project Assessment, please refer to the wind discussion in the PPA letter.)

7. Would the project involve work on a site with an existing or former gas station, auto repair, dry cleaners, or heavy manufacturing use, or a site with underground storage tanks?  YES  NO

If yes, please submit a Phase I Environmental Site Assessment (ESA) prepared by a qualified consultant. If the project is subject to Health Code Article 22A, Planning staff will refer the project sponsor to the Department of Public Health for enrollment in DPH's Maher program.

8. Would the project require any variances, special authorizations, or changes to the Planning Code or Zoning Maps?  YES  NO

If yes, please describe:

9. Is the project related to a larger project, series of projects, or program?  YES  NO

If yes, please describe:

## Estimated Construction Costs

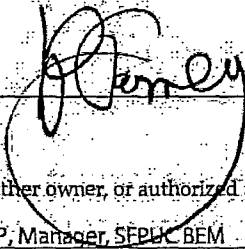
TYPE OF APPLICATION:	
N/A	
OCCUPANCY CLASSIFICATION:	
N/A	
BUILDING TYPE:	
N/A	
TOTAL GROSS SQUARE FEET OF CONSTRUCTION:	BY PROPOSED USES:
N/A	Electric Power Transmission Lines Towers
ESTIMATED CONSTRUCTION COST:	
N/A	
ESTIMATE PREPARED BY:	
FEE ESTABLISHED:	

## Applicant's Affidavit

Under penalty of perjury the following declarations are made:

- a: The undersigned is the owner or authorized agent of the owner of this property.
- b: The information presented is true and correct to the best of my knowledge.
- c: Other information or applications may be required.

Signature: \_\_\_\_\_



Date: 11/17/2014

Print name, and indicate whether owner, or authorized agent

Irina P. Torrey, AICP, Manager, SFPLC BEM

Owner / Authorized Agent (circle one)

# Environmental Evaluation Application Submittal Checklist

APPLICATION MATERIALS	PROVIDED	NOT APPLICABLE
Two originals of this application signed by owner or agent, with all blanks filled in.	<input type="checkbox"/>	
Two hard copy sets of project drawings in 11" x 17" format showing existing and proposed site plans with structures on the subject property and on immediately adjoining properties, and existing and proposed floor plans, elevations, and sections of the proposed project.	<input type="checkbox"/>	
One CD containing the application and project drawings and any other submittal materials that are available electronically. (e.g., geotechnical report)	<input type="checkbox"/>	
Photos of the project site and its immediate vicinity, with viewpoints labeled.	<input type="checkbox"/>	
Check payable to San Francisco Planning Department.	<input type="checkbox"/>	
Letter of authorization for agent.	<input type="checkbox"/>	<input type="checkbox"/>
<i>Supplemental Information for Historic Resource Evaluation</i> , as indicated in Part 5 Question 1.	<input type="checkbox"/>	<input type="checkbox"/>
<i>Historic Resource Evaluation</i> , as indicated in Part 5 Question 2.	<input type="checkbox"/>	<input type="checkbox"/>
Geotechnical report, as indicated in Part 5 Question 3.	<input type="checkbox"/>	<input type="checkbox"/>
<i>Tree Planting and Protection Checklist</i> , as indicated in Part 5 Question 4.	<input type="checkbox"/>	<input type="checkbox"/>
Phase I Environmental Site Assessment, as indicated in Part 5 Question 7.	<input type="checkbox"/>	<input type="checkbox"/>
Additional studies (list).	<input type="checkbox"/>	<input type="checkbox"/>

For Department Use Only:

Application received by Planning Department:

By: \_\_\_\_\_

Date: \_\_\_\_\_



SAN FRANCISCO  
PLANNING  
DEPARTMENT

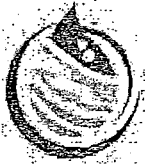
FOR MORE INFORMATION:  
Call or visit the San Francisco Planning Department

**Central Reception:**  
1650 Mission Street, Suite 400  
San Francisco CA 94103-2479

TEL: 415.558.6378  
FAX: 415.558.6409  
WEB: <http://www.sfplanning.org>

**Planning Information Center (PIC)**  
1650 Mission Street, First Floor  
San Francisco CA 94103-2479

TEL: 415.558.6377  
*Planning staff are available by phone and at the PIC counter.  
No appointment is necessary.*



**San Francisco  
Water Power Sewer**  
Operator of the Hetch Hetchy Regional Water System

Bureau of Environmental Management  
525 Golden Gate Avenue, 6th Floor  
San Francisco, CA 94102  
T (415) 934-5700  
F (415) 934-5750

November 17, 2014

Mr. Timothy Johnston, MP, Environmental Planner  
Environmental Planning Division  
San Francisco Planning Department  
1650 Mission Street, Fourth Floor  
San Francisco, CA 94103

RE:

Don Pedro Reservoir Crossing  
115kV & 230 kV Transmission Lines  
Contract Number HH-960  
CEQA Exemption Request

Dear Timothy:

The San Francisco Public Utilities Commission (SFPUC) requests review of the proposed 115 kV and 230 kV Transmission Lines Don Pedro Reservoir Crossing Project under the California Environmental Quality Act (CEQA). SFPUC requests Environmental Planning Division (EP) concurrence that the proposed Project is categorically exempt under CEQA Section 15302, Class 2 (**Replacement or Reconstruction**). Class 2 consists of the replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced. Subsection (d) provides an exemption for the replacement or reconstruction of existing utility systems and/ or facilities involving negligible or no expansion of capacity.

The following analysis demonstrates the proposed Project would not result in adverse environmental effects and provides support for our recommendation that the proposed activities are categorically exempt under CEQA. The Project would be conducted in compliance with applicable federal, State, and local regulations and under contractual provisions prohibiting work in violation of applicable regulations and plans.

**BACKGROUND**

The Hetch Hetchy Power system is composed of three hydroelectric powerhouses with a combined total hydroelectric output of over 400 megawatts. Energy is transmitted to the San Francisco Bay area along City-

Edwin M. Lee  
Mayor

Ann Moller Daan  
President

Francesca Victor  
Vice President

Vince Courtney  
Commissioner

Anson Moran  
Commissioner

Harlan L. Kelly, Jr.  
General Manager



Mr. Timothy Johnston, MP, Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
Don Pedro Reservoir Crossing 115kV & 230 kV Transmission Lines  
(Contract Number HH-960)  
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owned transmission lines from Tuolumne County to the City of Fremont in Alameda County.

## PROJECT DESCRIPTION

Four electric transmission lines operated and maintained by the SFPUC Power Enterprise that cross Don Pedro Reservoir in Tuolumne County do not meet the minimum clearance above the water level required by the National Electrical Safety Code (NESC) and the California Public Utilities Commission General Order Number 95 (dated January 2006) (See Basis of Design Memorandum prepared for the SFPUC Hetch Hetchy Water and Power by Black & Veatch, dated November 5, 2013). The four electric transmission lines (Newark Line – Circuits 3 and 4, and the Intake-Warnerville Line – Circuits 5 and 6) between Towers 58N and 64N and 258S and 264S must be raised to meet the minimum standards.

The proposed Project would involve construction of four steel monopoles, either 175 feet tall (replacement for towers 58N and 64N) or 180 feet tall (replacement for towers 258S and 264S) to replace the existing lattice style towers, which are 105 to 110 feet tall above grade. The monopoles would taper from bottom to top with a base diameter of approximately eight feet and 2-1/2 to 3 foot diameter at the top. See attached design drawings.

Once the transmission lines are restrung from the existing towers to the replacement towers the existing lattice towers would be disassembled and removed.

Drilled piers 12 feet in diameter embedded 29 feet into the ground would support each monopole (See drawing S-9020, Drilled Pier Foundations.). Although not anticipated, depending on the nature of the substrate limited blasting may be necessary to excavate the foundations for the monopoles.

Neighboring property owners and residents, particular along Kelly Grade Road and Marsh's Flat Road on the east side of the Reservoir, would be notified of the scheduled movement of large pieces of equipment and vehicles along those roads based on the possibility that slow driving speeds necessary for safe operation of the vehicles delivering the equipment and materials may increase travel time on those roads experienced by the neighboring property owners and residents.



Mr. Timothy Johnston, MP, Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
Don Pedro Reservoir Crossing 115kV & 230 kV Transmission Lines  
(Contract Number HH-960)  
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Biological surveys for both special status plant species and animals (in particular nesting birds) would be conducted shortly in advance of the start of construction as described in the Biological Resources Section below.

#### **Project Duration and Schedule**

Construction would require approximately 155 work days (approximately seven months), of which approximately 40 days would be required to construct towers 58N and 64N and 25 days to construct towers 258S and 264S. Construction is expected to begin in June 2015 with completion in March 2016. Construction work would be conducted between 7:00 a.m. and 5:00 p.m. Monday through Friday. Evening and weekend work would not be required.

#### **Project Equipment and Work Crew**

Work crews typically would include about five to seven members. Two to four pickup trucks would be used to transport work crew members to and from the project sites each day. Equipment would include a drill rig and concrete trucks to excavate and pour the foundation for the towers. Flatbed trucks would deliver the towers sections to be assembled on-site. Cranes would be used to assemble the towers at each location and disassemble and remove the lattice towers. A helicopter may be used to string the transmission lines.

#### **Site Access and Staging**

Proposed staging areas are identified on the attached drawings. All sites would be accessible over existing roadways.

#### **SFPUC Standard Construction Measures**

The SFPUC requires the Standard Construction Measures issued February 7, 2007 (on file at EP) be implemented as applicable, for all of its projects. Those measures applicable to this Project are included in the Project, as detailed below.

### **ENVIRONMENTAL INFORMATION**

#### **Aesthetics**

While the replacement transmission lines towers would be taller (approximately 175 to 180 feet versus 105 to 110 feet tall) than the existing, the replacement towers would be located within approximately 50 feet of the existing towers.

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which would be removed. The towers are located in a very isolated area and are not visible from any of the major roadways (State Route 49 or State Route 120) in the vicinity. The replacement towers would be visible to infrequent recreational users of Don Pedro Reservoir (houseboat and speedboat users) and to the few residents living around the Reservoir in the Project area.

The replacement towers are slender, approximately 2-1/2 to 3 feet in diameter at the top and approximately 8 feet in diameter at the bottom, and may be painted an appropriate color to blend in with the sky.

Therefore adverse effects to the aesthetic environment are not anticipated.

#### **Air Quality**

Although the total construction duration would be approximately 10 months (including necessary line outages and time to string the transmission lines), excavation of the towers supports and construction of the monopoles would be less than three months (86 calendar days). Based on the limited use of equipment and vehicles, adverse effects to air quality are not anticipated.

No sensitive receptors are within 1,000 feet of the project sites. A single residence on the west side of the Reservoir is approximately 0.2 mile from the nearest project site, approximately 1,050 feet away.

The SFPUC and the construction contractor would implement Standard Construction Measure Number 3 including preparation of a dust control plan and implementation of erosion and sedimentation controls to avoid generating fugitive dust during Project construction.

In addition, Tuolumne County has not established regulations for construction emissions. Therefore, the proposed Project would not be subject to the Bay Area Quality Management District CEQA Air Quality Guidelines related to assessment of local community risk and hazard impacts for both single source and cumulative effects.

#### **Archaeological and Historical Resources**

An archaeological survey of the proposed tower locations and staging areas was conducted by SFPUC staff archeologist Sally Morgan (electronic mail memorandum, November 2014, on file at the SFPUC Bureau of Environmental Management). The survey included a complete intensive survey of the work

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areas for the new and existing towers. Most of the proposed staging areas consist of spoils dumps from construction of SFPUC's Foothill Tunnel. As the potential presence of historic features or archaeological deposits on the spoils dumps was considered extremely low, only a cursory archaeological survey was conducted for these staging areas. However, a complete intensive archaeological survey was conducted of the small road shoulder staging areas. No historic or prehistoric features or deposits were found. Based on the shallow soils over the limestone substrate at the proposed monopoles locations, the potential for buried archaeological deposits also appears to be slight.

The existing lattice towers were constructed at two different times. The northern towers (Circuits 3 and 4, towers 58N and 64N) were constructed in 1956 and are therefore 58 years old. The southern towers (Circuits 5 and 6, towers 258S and 264S) were constructed in 1969 and are therefore 45 years old. None of the transmission lines and support towers have been identified as potential historic resources. The lattice towers proposed for disassembly and removal do not appear to qualify as historical resources. The primary reason is that the simple steel lattice towers are examples of a common resource type, represented by hundreds of identical examples along these transmission lines. Replacement of four towers between the Town of Moccasin and the City of Fremont, a distance of more than 100 miles, would not adversely affect the historical integrity of the transmission lines.

Therefore the proposed Project would not adversely affect cultural resources.

#### **Biological Resources**

At the request of the SFPUC, RMC Water & Environment and BioMaAS, Inc. prepared a biological constraints analysis of the project sites (copy attached dated September 20, 2014).

BioMaAS identified a number of special status plant and animal species that could be present on the Project sites or in the Project vicinity. Because the sites were not surveyed during plant blooming season (late winter or early spring), additional surveys were recommended in the spring prior to construction to confirm that special status plant species (*Balsamoriza macrolepis*, *Clarkia biloba ssp. australis*, and *Lupinus spectabilis*) are not present at any of the Project sites, if ground-disturbing work is going to be conducted during the blooming season.

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In addition, BioMaAS identified two old raptor nests, likely osprey, on towers 58N and 64N which would require SFPUC coordination with the USFWS migratory bird office for approval to remove the nests outside of nesting season before work begins. If work cannot be restricted to outside of bird nesting season, appropriate nesting bird buffers would be established to avoid impacts to nesting birds in the area surrounding the work site. SFPUC staff confirmed the nests situated on the transmission towers in question have been previously occupied by osprey and not bald eagles. According to Project Manager Tim Parkan, unoccupied nests on transmission towers are removed during the winter months under normal maintenance activities conducted by HHWP staff, based on standard HHWP practice recommended by former SFPUC Biologist Michael Horvath.

Also, the U. S. Bureau of Land Management Mother Lode Field Office has designated areas in the vicinity of the Don Pedro Reservoir as the Red Hills Area of Critical Environmental Concern (ACEC)<sup>1</sup>. The ACEC was designated to protect special status plants found normally on serpentine soils. As discussed in the Archeological and Historical Resources Section above, the proposed replacement towers sites are located on limestone not serpentine soils. Therefore the proposed Project is unlikely to encounter the special status plants identified in the ACEC. None of the proposed Project sites are on Bureau of Land Management land or within the boundary of the ACEC.

In order to comply with SFPUC Standard Construction Measure Number 8, the recommended additional general site surveys in particular for special status plants (including plant species that may be present in the nearby ACEC) and avoidance measures related to avian species would be implemented by the SFPUC and the construction contractor. The memorandum prepared by BioMaAS included a number of recommendations (limiting work to the September, October and November months to avoid impacts to avian species if feasible, or if infeasible surveys of the Project area and vicinity to identify the presence of active nests, if nests are present identification of buffer zones and limitation of activities within the buffer zones based on consultation with the California Department of Fish and Wildlife (CDFW) should avian species be present in the Project area.

<sup>1</sup> The map of the ACEC can be found on the BLM California Mother Lode Field Office Website at [http://www.blm.gov/style/medialib/blm/ca/pdf/folsom/gis\\_pdf\\_maps.Par.30850.File.dat/RedHillsACEC\\_Map2013web.pdf](http://www.blm.gov/style/medialib/blm/ca/pdf/folsom/gis_pdf_maps.Par.30850.File.dat/RedHillsACEC_Map2013web.pdf).

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Therefore, no adverse effects to biological resources are expected.

#### **Hazards and Hazardous Materials**

State Water Resources Control Board (SWRCB) Geotracker and State Department of Toxic Substances Control (DTSC) Envirostor databases were reviewed by SFPUUC staff. No hazardous sites were found at the towers sites and proposed staging areas.

Should hazardous materials be encountered the construction contractor would be required to comply with standard contract technical specifications related to the characterization, transportation and disposal of hazardous materials (should they be present) and comply with applicable local, State and federal regulations related to hazardous materials.

The construction crews would also be required to maintain a spill kit on site in the event fuels (gasoline or diesel) or lubricants are spilled during Project activity.

Therefore, adverse effects resulting from construction worker or public exposure to hazardous materials are not anticipated.

#### **Noise**

Tower sites are located in rural areas, and excavation and construction of replacement towers would take place more than 1,000 feet from the nearest residence. Tuolumne County has not adopted an ordinance regulating construction noise.

Although not anticipated, depending on the nature of the substrate to be drilled to install the foundations for the monopoles, limited blasting may be necessary. Also depending upon the stringing technique used once the replacement towers are constructed, either a haul line would be used to pull the conductor between the towers or use of a helicopter may be necessary.

Because construction of the replacement towers and stringing the wires would be temporary in nature and the closest sensitive receptor is more than 1,000 feet from the work area and recreational use of the Reservoir in the Project area is very limited, adverse effects from noise are not expected.

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### **Recreation**

Don Pedro Reservoir, operated by the Don Pedro Recreation Agency, is open to recreational boating activity. It is anticipated that restrictions on boating activity in the Project vicinity may be necessary if blasting is required and/or when the wires are strung between the replacement towers. The majority of the boating activity takes place at the far western end of the Reservoir near the Dam at the boat launching ramps and marinas. Due to the temporary nature of the Project construction activities and the more than 13,000 acres of water surface area (at maximum lake level) available for recreational use restrictions placed on recreational boating activities, if necessary, would not result in adverse effects to recreational use of Don Pedro Reservoir.

### **Transportation**

Traffic generated by the project would be limited to a minimum number of vehicles using lightly-traveled private roads. Vehicles travelling to and from the sites on the east side of the Reservoir would use Kelly Grade Road onto Marsh's Flat Road and then onto the project sites from State Highway 49. Access to the sites on the west side of the Reservoir would be from State Highway 108 to La Grange Road to Old Don Pedro Road.

Bringing heavy equipment and long delivery trucks to the east side of the reservoir may be problematic because the roads are steep, winding and narrow, with overhanging oaks in some areas. The SFPUC and the construction contractor intend to use the smallest possible vehicles and pieces of equipment to complete the proposed Project. As indicated in the Biological Resources Section above, trees would not be trimmed or removed to complete the proposed Project.

Based on the number of vehicles to be used and the temporary nature of project construction, traffic delays on the roads would be minimal. Equipment and vehicles would be parked on the proposed staging areas adjacent to the Project sites. Infrequent inspection, maintenance and repair of the towers and transmission lines is conducted by SFPUC HHWP staff. One or two vehicles are used by HHWP staff during the monthly (or less frequent) trips to the towers for inspection, maintenance or repair.

Therefore, adverse effects to transportation are not anticipated.

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#### **Water Quality**

No construction would take place within Don Pedro Reservoir (a water of the United States and a water of the State). SFPUC operation procedures as well as contract specifications require that best management practices for stormwater controls be implemented during construction. The SFPUC has an agreement with the Modesto Irrigation District and Turlock Irrigation District, operators of the Don Pedro Reservoir, to take water from the Reservoir when necessary. The Construction Contractor would be responsible for identification of the source of water needed to drill the foundations for the replacement towers. The Contractor would also be responsible for treatment of the water used for Project construction and appropriate disposal in compliance with applicable Central Valley Regional Water Quality Control Board regulations. As discussed earlier in the Air Quality section above, the SFPUC and the construction contractor would implement Standard Construction Measure Number 3 including preparation of a dust control plan and implementation of erosion and sedimentation controls.

Therefore adverse effects to water quality are not anticipated.

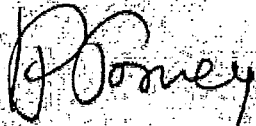
#### **CEQA COMPLIANCE RECOMMENDATION**

The SFPUC recommends that the proposed Don Pedro Reservoir Crossing Project 115kV & 230 kV Transmission Lines (Contract Number HH-960) be classified as categorically exempt under CEQA, Section CEQA Section 15302, Class 2 (**Replacement or Reconstruction**). Class 2 consists of the replacement or reconstruction of existing structures and facilities where the new structure will be located on the same site as the structure replaced and will have substantially the same purpose and capacity as the structure replaced. Subsection (d) provides an exemption for the replacement or reconstruction of existing utility systems and/or facilities involving negligible or no expansion of capacity.

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If you have any questions regarding the proposed Projects, please contact  
Barry Pearl, Senior Environmental Project Manager, at 415-551-4573.

Sincerely,



Irina P. Torrey, AICP, Manager  
Bureau of Environmental Management

Attachments: SFPUC Hetch Hetchy Water and Power Construction  
Contract HH-960  
Don Pedro Reservoir Crossing 115kV and 230kV  
Transmission Lines, October 30, 2013, 95% Drawings

SFPUC Hetch Hetchy Water & Power, Basis of Design  
Memorandum 115kV and 230kV Transmission Lines at  
Don Pedro Reservoir Crossing, prepared by Black & Veatch,  
95% Submittal Issue, November 5, 2013

BioMaAS, Inc: Don Pedro Crossing Biological Constraints  
Analysis Memorandum, Prepared for the SFPUC, Dated  
September 30, 2014

cc:

Tim Parkan, Project Manager, SFPUC Construction Management  
Peter Dean, Regulatory Specialist, SFPUC Hetch Hetchy Regional  
Water System, Natural Resources Division  
Paul R. Kneitz, Black & Veatch  
David J. Earles, Black & Veatch  
Thomas J. Walker  
Barry Pearl, AICP, MPA, SFPUC Senior Environmental Project  
Manager, Bureau of Environmental Management  
Deb Craven-Green, SFPUC Bureau of Environmental Management





# SAN FRANCISCO PLANNING DEPARTMENT

## CEQA CATEGORICAL EXEMPTION FORM

PROJECT NAME: Hetch Hetchy Powerhouse SCADA Upgrades

PROJECT LOCATION: Holm, Kirkwood and Moccasin Powerhouses

CASE NUMBER: 2014-002112ENV

PROJECT TYPE:  New Facility  Replacement Facility/Equipment  
 Repair/Maintenance/Upgrade  Other: \_\_\_\_\_

### 1. EXEMPTION CLASS

- Class 1: Existing Facilities
- Class 2: Replacement or Reconstruction
- Class 3: New Construction or Conversion of Small Structures
- Class 6: Information Collection
- Other: \_\_\_\_\_

### 2. CEQA Impacts

For any box checked below, refer to the attached Environmental Evaluation Application with supporting analysis and documentation.

- Air Quality: Would the project affect sensitive receptors (specifically schools, colleges, universities, day care facilities, hospitals, residential dwellings, or senior-care facilities)?
- Noise: Would the project conflict with the applicable local Noise Ordinance?
- Hazardous Materials: Would the project be located on a site included on any list compiled pursuant to Section 65962.5 of the Government Code, or impact an area with known hazardous materials such as a former gas station, auto repair, dry cleaners, heavy manufacturing use, or site with underground storage tanks?
- Soils Disturbance/Modification: Would the project result in soil disturbance greater than 2 feet below grade in archeological sensitive area or 8 feet in a non-archeological sensitive area?
- Biology: Would the project have the potential to impact sensitive species, rare plants or designated critical habitat? Is the project consistent with the applicable tree protection ordinance?

Visual: Is the project located within or adjacent to a designated scenic roadway, or would the project have the potential to impact scenic resources that are visible from public locations?

Transportation: Would project construction or operation have the potential to substantially interfere with existing traffic patterns or transit operations.

Historical Resources: Is the project located on a site with a known or potential historical resource?

Other: \_\_\_\_\_

### 3. CATEGORICAL EXEMPTION DETERMINATION

Further Environmental Review Required.

Notes: \_\_\_\_\_

No Further Environmental Review Required. Project is categorically exempt under CEQA.



Digitally signed by Chris Kern  
DN: dc=org, dc=sfgov, dc=cityplanning,  
ou=CityPlanning, ou=Environmental  
Planning, cn=Chris Kern,  
email=chris.kern@sfgov.org  
Date: 2014.11.26 08:09:02 -08'00'

11/26/14

Planner's Signature

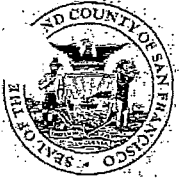
Date

Chris Kern, Senior Environmental Planner

Name, Title

Project Approval Action: Approval to award construction contract

Once signed and dated, this document constitutes a categorical exemption pursuant to CEQA Guidelines and Chapter 31 of the Administrative Code.



# SAN FRANCISCO PLANNING DEPARTMENT

## ENVIRONMENTAL EVALUATION APPLICATION COVER MEMO - PUBLIC PROJECTS ONLY

In accordance with Chapter 31 of the San Francisco Administrative Code, an appeal of an exemption determination can only be filed within 30 days of the project receiving the first approval action.

Please attach this memo along with all necessary materials to the Environmental Evaluation Application.

Project Address and/or Title:	SFPUC HHWP Powerhouse Control Upgrade: SCADA
Funding Source (MTA only):	
Project Approval Action:	Approval to award the construction contract would require a public hearing.
Will the approval action be taken at a noticed public hearing?	<input checked="" type="checkbox"/> YES* <input type="checkbox"/> NO
* If YES is checked, please see below.	

### IF APPROVAL ACTION IS TAKEN AT A NOTICED PUBLIC HEARING, INCLUDE THE FOLLOWING CALENDAR LANGUAGE:

End of Calendar: CEQA Appeal Rights under Chapter 31 of the San Francisco Administrative Code If the Commission approves an action identified by an exemption or negative declaration as the Approval Action (as defined in S.F. Administrative Code Chapter 31, as amended, Board of Supervisors Ordinance Number 161-13), then the CEQA decision prepared in support of that Approval Action is thereafter subject to appeal within the time frame specified in S.F. Administrative Code Section 31.16. Typically, an appeal must be filed within 30 calendar days of the Approval Action. For information on filing an appeal under Chapter 31, contact the Clerk of the Board of Supervisors at City Hall, 1 Dr. Carlton B. Goodlett Place, Room 244, San Francisco, CA 94102, or call (415) 554-5184. If the Department's Environmental Review Officer has deemed a project to be exempt from further environmental review, an exemption determination has been prepared and can be obtained on-line at <http://sf-planning.org/index.aspx?page=3447>. Under CEQA, in a later court challenge, a litigant may be limited to raising only those issues previously raised at a hearing on the project or in written correspondence delivered to the Board of Supervisors, Planning Commission, Planning Department or other City board, commission or department at, or prior to, such hearing, or as part of the appeal hearing process on the CEQA decision.

Individual calendar items: This proposed action is the Approval Action as defined by S.F. Administrative Code Chapter 31.

### THE FOLLOWING MATERIALS ARE INCLUDED:

- 2 sets of plans (11x17)
- Project description
- Photos of proposed work areas/project site
- Necessary background reports (specified in EEA)
- MTA only: Synchro data for lane reductions and traffic calming projects

# APPLICATION FOR Environmental Evaluation

## 1. Owner/Applicant Information

PROPERTY OWNER'S NAME: San Francisco Public Utilities Commission, Power Enterprise	
PROPERTY OWNER'S ADDRESS: 525 Golden Gate Avenue, 13th Floor San Francisco, CA 94102-3220	TELEPHONE: ( 415 ) 554-3155
	EMAIL: www.sfwater.org

APPLICANT'S NAME: San Francisco Public Utilities Commission, Bureau of Environmental Management <span style="float: right;">Same as Above <input type="checkbox"/></span>	
APPLICANT'S ADDRESS: 525 Golden Gate Avenue, 6th Floor San Francisco, CA 94102-3220	TELEPHONE: ( 415 ) 934-5700
	EMAIL: BEM@sfwater.org

CONTACT FOR PROJECT INFORMATION: Barry Pearl, AICP, MPA, Senior Environmental Project Manager <span style="float: right;">Same as Above <input type="checkbox"/></span>	
ADDRESS: 525 Golden Gate Avenue, 6th Floor San Francisco, CA 94102-3220	TELEPHONE: ( )
	EMAIL:

## 2. Location and Classification

STREET ADDRESS OF PROJECT: Dion R. Holm Powerhouse, Robert C. Kirkwood Powerhouse, Moccasin Powerhouse	ZIP CODE:
CROSS STREETS: Tuolumne County, CA	

ASSESSOR'S BLOCK/LOT: N/A / N/A	LOT DIMENSIONS: N/A	LOT AREA (SQ FT): N/A	ZONING DISTRICT: N/A	HEIGHT/BULK DISTRICT: N/A
COMMUNITY PLAN AREA (IF ANY): N/A				

## 3. Project Description

( Please check all that apply ) <input type="checkbox"/> Change of Use <input type="checkbox"/> Change of Hours <input type="checkbox"/> New Construction <input type="checkbox"/> Alterations <input type="checkbox"/> Demolition <input checked="" type="checkbox"/> Other Please clarify: System Control Data Systems	ADDITIONS TO BUILDING: <input type="checkbox"/> Rear <input type="checkbox"/> Front <input type="checkbox"/> Height <input type="checkbox"/> Side Yard	PRESENT OR PREVIOUS USE: SFPUC Hydroelectric Powerhouses
		PROPOSED USE: SFPUC Hydroelectric Powerhouses
		BUILDING APPLICATION PERMIT NO.: DATE FILED:

4. Project Summary Table:

If you are not sure of the eventual size of the project, provide the maximum estimates.

	EXISTING USES:	EXISTING USES TO BE RETAINED:	NET NEW CONSTRUCTION AND/OR ADDITION:	PROJECT TOTALS:
<b>PROJECT FEATURES</b>				
Dwelling Units	N/A	N/A	N/A	N/A
Hotel Rooms	N/A	N/A	N/A	N/A
Parking Spaces	N/A	N/A	N/A	N/A
Loading Spaces	N/A	N/A	N/A	N/A
Number of Buildings	3 (one at each site)	3 (one at each site)	N/A	3 (one at each site)
Height of Building(s)	~30	~30	N/A	~30
Number of Stories	One	One	N/A	One
Bicycle Spaces	N/A	N/A	N/A	N/A
<b>GROSS SQUARE FOOTAGE (GSF)</b>				
Residential	N/A	N/A	N/A	N/A
Retail	N/A	N/A	N/A	N/A
Office	N/A	N/A	N/A	N/A
Industrial	N/A	N/A	N/A	N/A
PDR Production, Distribution, & Repair	N/A	N/A	N/A	N/A
Parking	N/A	N/A	N/A	N/A
Other (Specify Use)	N/A	N/A	N/A	N/A
<b>TOTAL GSF</b>	N/A	N/A	N/A	N/A

Please provide a narrative project description that summarizes the project and its purpose or describe any additional features that are not included in this table. Please list any special authorizations or changes to the Planning Code or Zoning Maps if applicable.

The SFPUC is registered as Generation Owner, Generation Operator, Transmission Owner, and Transmission Operator with the North American Electric Reliability Corporation (NERC) and is required to comply with NERC Critical Infrastructure Protection Standards. NERC is the electric reliability organization for North America, subject to oversight by the Federal Energy Regulatory Commission. The current SCADA system has limitations and the SFPUC has experienced many stability issues. The system will be replaced with a solution that allows the SFPUC to meet their regulatory obligations.

The proposed project would upgrade the protection, control, indication and monitoring system at all three powerhouses (Holm, Kirkwood and Moccasin). Because the systems are integrated, upgrades must be completed at the powerhouses at the same time in order to ensure the systems are compatible. Proposed improvements would include:

- Replacement of electromechanical relays with multifunction digital relays to improve reliability and functionality of the electrical protection system,
- De-terminating the wiring,
- Removing relays from the main control board, and
- Installing new relays and internal wiring.

Digital relays would be equipped with diagnostics that would notify the operator or sound an alarm if relay trouble occurs, thus preventing potential consequential failures, damage, and electrical safety hazards. The existing electromechanical type relays are not equipped with diagnostic capability and present a higher overall risk of failure. If an electromechanical relay fails, there is a loss of protection on the electric system that could prevent power generation.

5. Environmental Evaluation Project Information:

1. Would the project involve a major alteration of a structure constructed 45 or more years ago or a structure in a historic district?  YES  NO

If yes, submit the *Supplemental Information for Historic Resource Evaluation* application.

2. Would the project involve demolition of a structure constructed 45 or more years ago or a structure located in a historic district?  YES  NO

If yes, a historic resource evaluation (HRE) report will be required. The scope of the HRE will be determined in consultation with Preservation Planning staff.

3. Would the project result in excavation or soil disturbance/modification?  YES  NO

If yes, please provide the following:

Depth of excavation/disturbance below grade (in feet): \_\_\_\_\_

Area of excavation/disturbance (in square feet): \_\_\_\_\_

Amount of excavation (in cubic yards): \_\_\_\_\_

Type of foundation to be used (if known) and/or other information regarding excavation or soil disturbance modification:

*Note: A geotechnical report prepared by a qualified professional must be submitted if one of the following thresholds apply to the project:*

- \* The project involves a lot split located on a slope equal to or greater than 20 percent.
- \* The project is located in a seismic hazard landslide zone or on a lot with a slope average equal to or greater than 20 percent and involves either
  - excavation of 50 or more cubic yards of soil, or
  - building expansion greater than 1,000 square feet outside of the existing building footprint.

*A geotechnical report may also be required for other circumstances as determined by Environmental Planning staff.*

4. Would the project involve any of the following: (1) construction of a new building, (2) relocation of an existing building, (3) addition of a new dwelling unit, (4) addition of a garage or parking space, (5) addition of 20 percent or more of an existing building's gross floor area, or (6) paving or repaving of 200 or more square feet of an existing building's front setback?  YES  NO

If yes, please submit a *Tree Planting and Protection Checklist*.

5. Would the project result in any construction over 40 feet in height?

YES  NO

If yes, please submit a *Shadow Analysis Application*. This application should be filed at the PIC and should not be included with the Environmental Evaluation Application. (If the project already underwent Preliminary Project Assessment, this application may not be needed. Please refer to the shadow discussion in the PPA letter.)

6. Would the project result in a construction of a structure 80 feet or higher?

YES  NO

If yes, an initial review by a wind expert, including a recommendation as to whether a wind analysis is needed, may be required, as determined by Planning staff. (If the project already underwent Preliminary Project Assessment, please refer to the wind discussion in the PPA letter.)

7. Would the project involve work on a site with an existing or former gas station, auto repair, dry cleaners, or heavy manufacturing use, or a site with underground storage tanks?

YES  NO

If yes, please submit a Phase I Environmental Site Assessment (ESA) prepared by a qualified consultant. If the project is subject to Health Code Article 22A, Planning staff will refer the project sponsor to the Department of Public Health for enrollment in DPH's Maher program.

8. Would the project require any variances, special authorizations, or changes to the Planning Code or Zoning Maps?

YES  NO

If yes, please describe.

9. Is the project related to a larger project, series of projects, or program?

YES  NO

If yes, please describe.

## Estimated Construction Costs

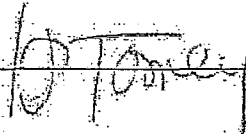
TYPE OF APPLICATION:	
N/A	
OCCUPANCY CLASSIFICATION:	
N/A	
BUILDING TYPE:	
Type 1	
TOTAL GROSS SQUARE FEET OF CONSTRUCTION:	BY PROPOSED USES:
N/A	Hydroelectric Powerhouse
ESTIMATED CONSTRUCTION COST:	
N/A	
ESTIMATE PREPARED BY:	
FEE ESTABLISHED:	

## Applicant's Affidavit

Under penalty of perjury the following declarations are made:

- a: The undersigned is the owner or authorized agent of the owner of this property.
- b: The information presented is true and correct to the best of my knowledge.
- c: Other information or applications may be required.

Signature: \_\_\_\_\_



Date: 11/25/2014 \_\_\_\_\_

Print name, and indicate whether owner, or authorized agent:

Irina P. Torrey, AICP, Manager, SFPUC BEM

Owner / Authorized Agent (circle one)





# Environmental Evaluation Application Submittal Checklist

APPLICATION MATERIALS	PROVIDED	NOT APPLICABLE
Two originals of this application signed by owner or agent, with all blanks filled in.	<input type="checkbox"/>	
Two hard copy sets of project drawings in 11" x 17" format showing existing and proposed site plans with structures on the subject property and on immediately adjoining properties, and existing and proposed floor plans, elevations, and sections of the proposed project.	<input type="checkbox"/>	
One CD containing the application and project drawings and any other submittal materials that are available electronically. (e.g., geotechnical report)	<input type="checkbox"/>	
Photos of the project site and its immediate vicinity, with viewpoints labeled.	<input type="checkbox"/>	
Check payable to San Francisco Planning Department.	<input type="checkbox"/>	
Letter of authorization for agent.	<input type="checkbox"/>	<input type="checkbox"/>
Supplemental Information for Historic Resource Evaluation, as indicated in Part 5 Question 1.	<input type="checkbox"/>	<input type="checkbox"/>
Historic Resource Evaluation, as indicated in Part 5 Question 2.	<input type="checkbox"/>	<input type="checkbox"/>
Geotechnical report, as indicated in Part 5 Question 3.	<input type="checkbox"/>	<input type="checkbox"/>
Tree Planting and Protection Checklist, as indicated in Part 5 Question 4.	<input type="checkbox"/>	<input type="checkbox"/>
Phase I Environmental Site Assessment, as indicated in Part 5 Question 7.	<input type="checkbox"/>	<input type="checkbox"/>
Additional studies (list):	<input type="checkbox"/>	<input type="checkbox"/>

For Department Use Only

Application received by Planning Department:

By: \_\_\_\_\_ Date: \_\_\_\_\_



**FOR MORE INFORMATION:**  
Call or visit the San Francisco Planning Department.

**Central Reception**  
1650 Mission Street, Suite 400  
San Francisco CA 94103-2479

TEL: 415.558.6378  
FAX: 415.558.6409  
WEB: <http://www.sfplanning.org>

**Planning Information Center (PIC)**  
1660 Mission Street, First Floor  
San Francisco CA 94103-2479

TEL: 415.558.6377  
Planning staff are available by phone and at the PIC counter.  
No appointment is necessary.



# San Francisco Water Power Sewer

Operator of the Hetch Hetchy Regional Water System

Bureau of Environmental Management  
525 Golden Gate Avenue, 6th Floor  
San Francisco, CA 94102  
T (415) 934-5700  
F (415) 934-5750

November 25, 2014

Mr. Timothy Johnston, MP, Environmental Planner  
Environmental Planning Division  
San Francisco Planning Department  
1650 Mission Street, Fourth Floor  
San Francisco, CA 94103

RE: CEQA Exemption Request  
Hetch Hetchy Water & Power  
Powerhouse Control Upgrade:  
Supervisory Control and Data  
Acquisition (SCADA)

Dear Timothy:

The San Francisco Public Utilities Commission (SFPUC) requests review of the proposed Hetch Hetchy Water and Power Powerhouse Control Upgrade: Supervisory Control and Data Acquisition (SCADA) Project under the California Environmental Quality Act (CEQA). SFPUC requests Environmental Planning Division (EP) concurrence that the proposed Project is categorically exempt under CEQA Section 15301, Class 1 (**Existing Facilities**). Class 1 consists of the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of existing public or private structures, facilities, mechanical equipment, involving negligible or no expansion of use. Subsection (b) provides an exemption for existing facilities of both investor and publicly owned utilities.

The following analysis demonstrates the proposed Project would not result in adverse environmental effects and provides support for our recommendation that the proposed activities are categorically exempt under CEQA. The Project would be conducted in compliance with applicable federal, State, and local regulations and under contractual provisions prohibiting work in violation of applicable regulations and plans.

## BACKGROUND

The SFPUC is registered as Generation Owner, Generation Operator, Transmission Owner, and Transmission Operator with the North American Electric Reliability Corporation (NERC) and is required to comply with NERC Critical Infrastructure Protection Standards. NERC is the electric reliability organization for North America, subject to oversight by the Federal Energy Regulatory Commission. The current SCADA system has limitations and the

Edwin M. Lee  
Mayor

Ann Moller-Cann  
President

Francesca Vietor  
Vice President

Vince Courtney  
Commissioner

Anson Moran  
Commissioner

Harlan L. Kelly, Jr.  
General Manager



Mr. Timothy Johnston, MP, Environmental Planner  
Environmental Planning Division, San Francisco Planning Department  
CEQA Exemption Request  
Hetch Hetchy Water & Power Powerhouse Control Upgrade:  
Supervisory Control and Data Acquisition (SCADA)  
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SFPUC has experienced many stability issues. The system will be replaced with a solution that allows the SFPUC to meet their regulatory obligations

## **PROJECT DESCRIPTION**

The proposed project would upgrade the protection, control, indication and monitoring system at all three powerhouses (Holm, Kirkwood and Moccasin). Because the systems are integrated, upgrades must be completed at the powerhouses at the same time in order to ensure the systems are compatible. Proposed improvements would include:

- Replacement of electromechanical relays with multifunction digital relays to improve reliability and functionality of the electrical protection system,
- De-terminating the wiring,
- Removing relays from the main control board, and
- Installing new relays and internal wiring.

Digital relays would be equipped with diagnostics that would notify the operator or sound an alarm if relay trouble occurs, thus preventing potential consequential failures, damage, and electrical safety hazards. The existing electromechanical type relays are not equipped with diagnostic capability and present a higher overall risk of failure. If an electromechanical relay fails, there is a loss of protection on the electric system that could prevent power generation.

Furthermore, current regulatory requirements specify digital relays be maintained every five years instead of annually as required for the electromechanical type.

Much of the work to be completed to Upgrade the SCADA system involves replacement of computer hardware and software.

None of the proposed Upgrades would involve construction outside the powerhouses.

SCADA antenna installed on the powerhouses would not require replacement and would function with the proposed Upgrades.

## **Project Duration and Schedule**

Mr. Timothy Johnston, MP, Environmental Planner  
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Final design, procurement and installation would be completed within one year.  
Construction work would be conducted between 7:00 a.m. and 5:00 p.m.  
Monday through Friday. Evening and weekend work would not be required.

#### **Project Equipment and Work Crew**

Work crews typically would include about five to seven members. Two to four pickup trucks would be used to transport work crew members to and from the project sites each day.

#### **Site Access and Staging**

Project staging would take place within the properties of the powerhouses. All sites would be accessible over existing roadways.

#### **SFPUC Standard Construction Measures**

The SFPUC requires the Standard Construction Measures issued February 7, 2007 (on file at EP) be implemented as applicable, for all of its projects. Those measures applicable to this Project are included in the Project, as detailed below.

### **ENVIRONMENTAL INFORMATION**

#### *Aesthetics*

Because none of the Upgrades would involve work outside the Powerhouses, there would be no adverse effects to the visual environment.

#### *Air Quality*

No construction work would take place outside the Powerhouses.

No sensitive receptors are located within 1,000 feet of either Holm or Kirkwood Powerhouse. Although sensitive receptors (HHWP staff and their families reside in the Town of Moccasin near the Powerhouse) are located within 1,000 feet of the Powerhouse, all work would take place inside the building.

Tuolumne County has not established regulations for construction emissions. Therefore, the proposed Project would not be subject to the Bay Area Quality Management District CEQA Air Quality Guidelines related to assessment of local community risk and hazard impacts for both single source and cumulative effects.

Mr. Timothy Johnston, MP, Environmental Planner  
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Archeological Resources and Historical Resources

Dion R. Holm Powerhouse was built in 1960 and is therefore more than 50 years old. The other two powerhouses are less than 50 years old. None of the powerhouses have been identified as a historic or architectural resource.

No alterations of the exterior of any of the powerhouses are proposed.

Nor are any ground-disturbing activities proposed which would potentially encounter sub-surface cultural resources, if present.

Therefore adverse effects to cultural resources are not anticipated.

Biological Resources

None of the powerhouses are located in natural areas where species of concern may be present. Proposed Upgrades would not require tree trimming or tree removal resulting in potential adverse effects to nesting birds.

All three powerhouses are situated on paved land. Landscape vegetation is not planted around any of the powerhouses.

Therefore adverse effects to biological resources are not anticipated.

Hazards and Hazardous Materials

State Water Resources Control Board (SWRCB) Geotracker and State Department of Toxic Substances Control (DTSC) Envirostor databases were reviewed by SFPUC staff. No hazardous sites were found at or in the vicinity of the three powerhouses.

Should hazardous materials be encountered the construction contractor would be required to comply with standard contract technical specifications related to the characterization, transportation and disposal of hazardous materials (should they be present) and comply with applicable local, State and federal regulations related to hazardous materials.

Therefore, adverse effects resulting from construction worker or public exposure to hazardous materials are not anticipated.

Noise

Mr. Timothy Johnston, MP, Environmental Planner  
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As discussed in the Air Quality Section above, no sensitive receptors are located in the vicinity of the Holm and Kirkwood Powerhouses. HHWP employees and their families reside in the Town of Moccasin in the vicinity of the Powerhouse.

Proposed Upgrades would all be completed inside the powerhouses.

In addition, Tuolumne County has not adopted an ordinance regulating construction noise.

Therefore adverse effects resulting from construction generated noise are not anticipated.

#### Recreation

No areas used for active or passive recreation are located within the boundaries of the powerhouses' sites.

Therefore adverse effects to recreational activities are not anticipated.

#### Transportation

Traffic generated by project activity at the three powerhouses would be limited to a minimum number of vehicles using lightly-traveled private roads. The number and types of vehicles used would not delay traffic on State Highways (Routes 49 and 120) in the vicinity.

Vehicles used by the project contractor will utilize available off-street parking spaces.

Adverse effects to transportation are not anticipated.

#### Water Quality

None of the proposed Upgrades would be conducted within waters of the United States or waters of the State.

Therefore adverse effects to water quality are not anticipated.

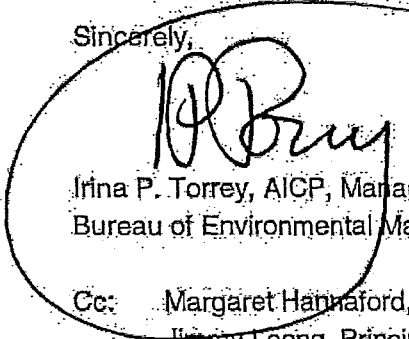
Mr. Timothy Johnston, MP, Environmental Planner  
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**CEQA COMPLIANCE RECOMMENDATION**

The SFPUC recommends the proposed Hetch Hetchy Water & Power Powerhouse Control Upgrade: Supervisory Control and Data Acquisition (SCADA) be classified as categorically exempt under CEQA Guidelines Section 15301 (Existing Facilities), subsection (b).

If you have any questions regarding the proposed Projects, please contact Barry Pearl, Senior Environmental Project Manager, at 415-551-4573.

Sincerely,



Irina P. Torrey, AICP, Manager  
Bureau of Environmental Management

Cc: Margaret Hannaford, Manager, Hetch Hetchy Water & Power Division  
Jimmy Leong, Principal Engineer, Project Management Bureau  
Richard M. Morales, Debt Manager, SFPUC  
Barry Pearl, AICP, MPA, Senior Environmental Project Manager  
Cheryl Sperry, Principal Administrative Analyst, HHWP

OFFICE OF THE MAYOR  
SAN FRANCISCO



RECEIVED  
BOARD OF SUPERVISORS  
SAN FRANCISCO

EDWIN M. LEE  
MAYOR

2015 MAR -3 PM 4:56

TO: Angela Calvillo, Clerk of the Board of Supervisors <sup>BJ</sup>

FROM: *EL* Mayor Edwin M. Lee *W*

RE: Substitute Ordinance - # - 150079 - Public Utilities Commission 2015  
Power Revenue Bonds Issuance---Not to Exceed \$48,000,000

DATE: March 3<sup>rd</sup>, 2015

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Attached for substitution to the Board of Supervisors is an ordinance approving the issuance and sale of revenue bonds by the Public Utilities Commission of the City and County of San Francisco in an aggregate principal amount not to exceed \$48,000,000 to finance various capital projects consisting of (1) reconstruction or replacement of existing water and/or electric power facilities pursuant to Charter Section 9.107(6) and (2) the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation pursuant to Charter Section 9.107(8); approving the execution of certain documents and agreements; and confirming and making certain CEQA determinations and approving other actions and matters in connection therewith.

I respectfully request that this item be calendared in Budget and Finance on March 11<sup>th</sup>, 2015.

Should you have any questions, please contact Nicole Wheaton (415) 554-7940.



OFFICE OF THE MAYOR  
SAN FRANCISCO



EDWIN M. LEE  
MAYOR

TO: Angela Calvillo, Clerk of the Board of Supervisors  
FROM: *Ed* Mayor Edwin M. Lee *NE*  
RE: Public Utilities Commission 2015 Power Revenue Bonds Issuance---Not to Exceed \$48,000,000  
DATE: January 27, 2015

Attached for introduction to the Board of Supervisors is an ordinance approving the issuance and sale of revenue bonds by the Public Utilities Commission of the City and County of San Francisco in an aggregate principal amount not to exceed \$48,000,000 to finance various capital projects consisting of (1) reconstruction or replacement of existing water and/or electric power facilities pursuant to Charter Section 9.107(6) and (2) the acquisition, construction, installation, equipping, improvement or rehabilitation of equipment or facilities for renewable energy and energy conservation pursuant to Charter Section 9.107(8); approving the execution of certain documents and agreements; and approving other actions and matters in connection therewith.

I respectfully request a waiver of the 30-day hold on this legislation.

Should you have any questions, please contact Nicole Wheaton (415) 554-7940.

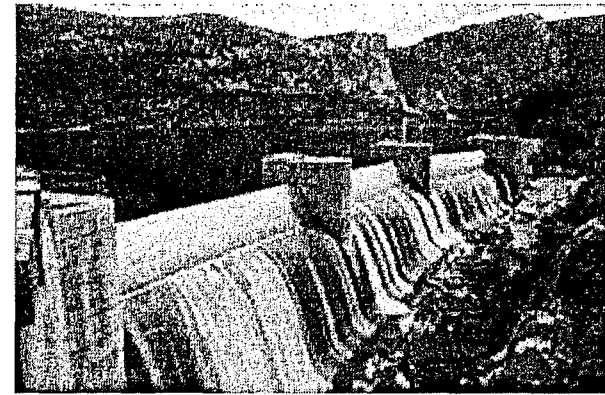
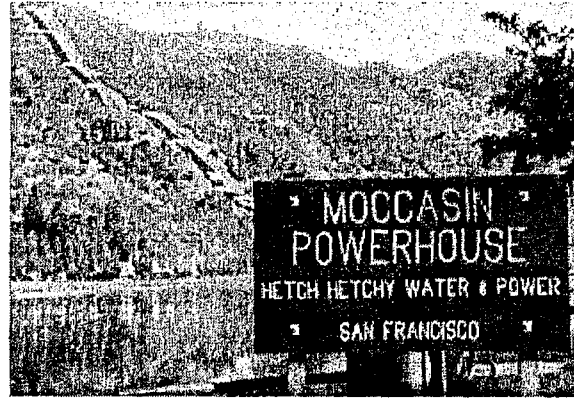
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AK





File # 150078 5079  
Received in Committee  
3/11/15  
J.W.

Services of the San Francisco Public Utilities Commission



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# Establishing SFPUC Power Revenue Bond Program & Inaugural 2015A Series Power Bond Authorization Budget and Finance Committee

March 11, 2015  
Charles Perl, Deputy CFO



# Long-Term Planning Assumes Bond Financing

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Services of the San Francisco Public Utilities Commission

- Two-Year Budget, 10-Year Financial/Capital Plans Balanced
- FY 2016 - 2025 10-Year CIP approved by Commission February 10, 2015
  - ◆ \$760M Capital Plan
    - \$550M power bonds
    - \$210M revenues and other source
- Future debt service incorporated into long-term planning and rate setting assumptions; electric rates approved through FY 2015-16



# Power Bond Ordinance

Services of the San Francisco Public Utilities Commission

- Ordinance establishes procedures for issuance of Power revenues bonds payable from and secured by Power Enterprise Revenues
- Commits to rate setting sufficient to repay bonds
- Allows for issuance of refunding bonds without further BOS approval
  - ◆ PUC agrees to establishing minimum 3% savings threshold per Budget Analyst recommendation
  - ◆ PUC agrees to providing savings report to BOS



# 2015A Series Power Bonds

Services of the San Francisco Public Utilities Commission

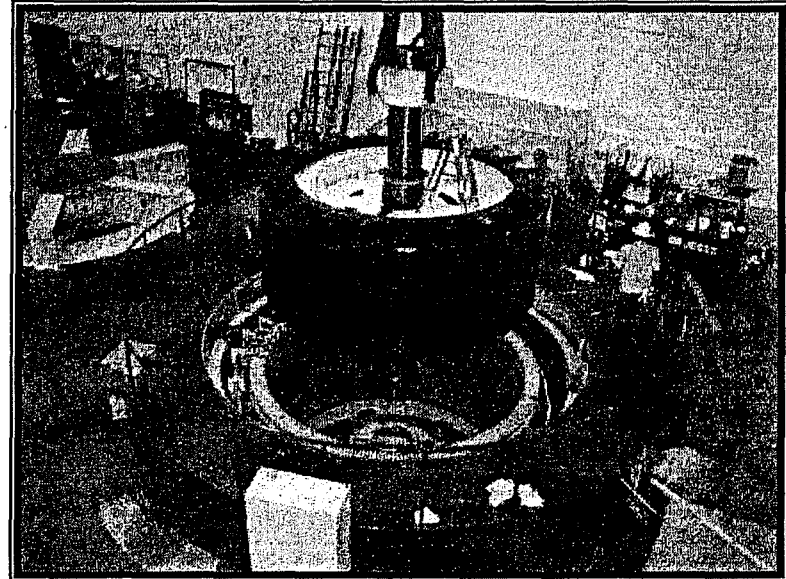
- Not to Exceed \$48M sale late spring 2015 to fund critical upcountry hydropower facility projects
  - \$29.2M – powerhouse/ generator projects
  - \$5.0M – transmission line/distribution systems
  - \$3.1M – switchyard/substation/transformer projects
- Estimated average annual debt service \$2.9M, with estimated 4.2% interest rate
- Debt service included in budget/rates/long term plans

# Critical Upcountry Repairs: Generators

Services of the San Francisco Public Utilities Commission

## \$24M Project: Moccasin Generator Project

- Replace stator core, windings and rotor repair
- Two units, 25% system capacity
- In service 46 years, 25-40 year useful life
- If units go offline, \$18M revenue impact



Rotor being removed during a generator rewind

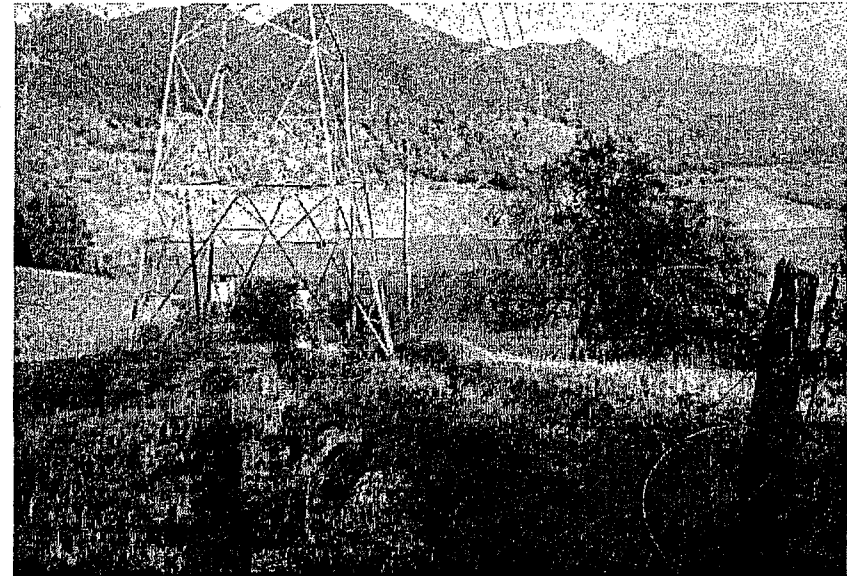


# Critical Upcountry Repairs: Transmission

Services of the San Francisco Public Utilities Commission

\$5M Project: Transmission Lines/Distribution System  
Moccasin to Warnerville 115kV, 230kV transmission lines

- Replace electric transmission towers and conductor
- Clearance of conductor over reservoir does not meet current state / federal safety regulations
- No project: Loss of all HHWP generation to the grid



HHWP crossing over Don Pedro Reservoir





# First SFPUC “Green Bonds” Issuance

Services of the San Francisco Public Utilities Commission

- Hydro power generation projects designated as “Green Bonds”
- New credit market designation identifying investment opportunity in environmentally beneficial projects
- SFPUC will self-certify that Bonds fund power-related projects that generate 100% GHG-free electricity
- Broadens investor community for SFPUC bonds



# Power Bond Indenture Similar to Water and Wastewater

Services of the San Francisco Public Utilities Commission

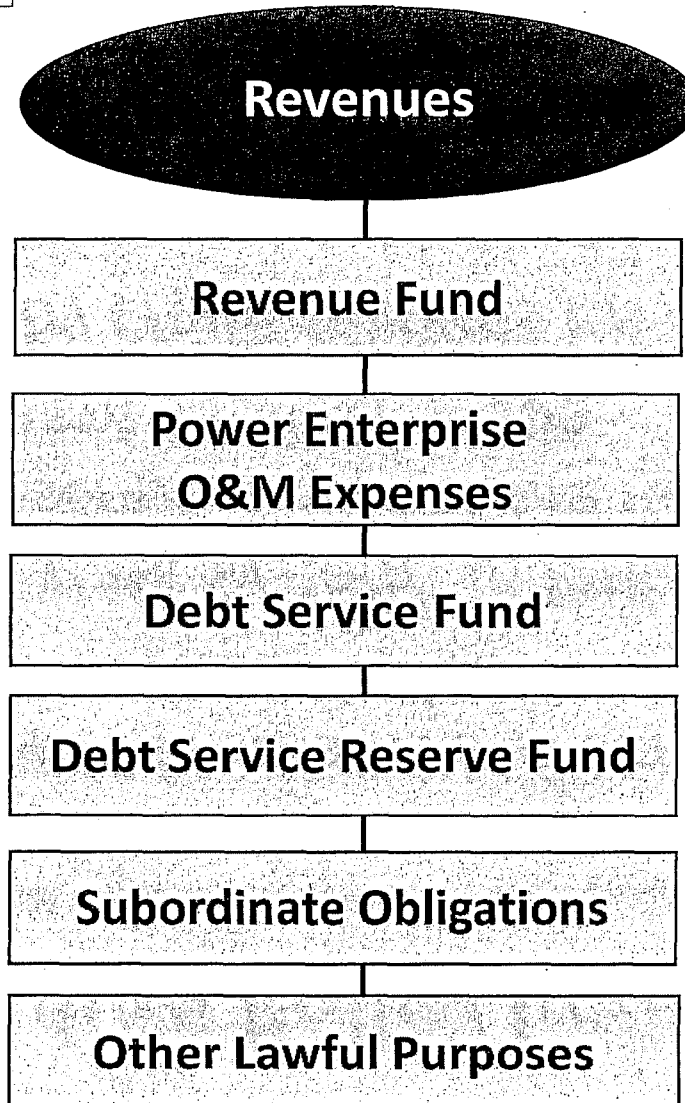
	<b>Water Indenture</b>	<b>Wastewater Indenture</b>	<b><u>Proposed Power Indenture</u></b>
<b>Net Revenues</b>	<b>Revenues less O&amp;M and any Priority R&amp;R Fund Deposit</b>	<b>Same</b>	<b>Same</b>
<b>O&amp;M</b>	<b>Costs of the proper operation, maintenance and repair of the Enterprise</b>	<b>Same</b>	<b>Same</b>
<b>Rate Covenant</b>	<b>Maintain rates such that Net Revenues plus Available Funds are at least: 1.25x; Net Revenues only: 1.00x DSC</b>	<b>Same</b>	<b>Same</b>
<b>Additional Bonds Test</b>	<b>Net Revenues plus Available Funds are at least: 1.25x; Net Revenues only: 1.00x DSC</b>	<b>Same</b>	<b>Same</b>
<b>Debt Service Reserve Fund</b>	<b>At SFPUC's option, currently no Reserve Fund required</b>	<b>Same</b>	<b>100% Max Annual Debt Service (MADS)*</b>

\*Series 2015A Power Bonds will include a reserve fund, but future bond series might not



# Flow of Funds - Same as Water and Wastewater

Services of the San Francisco Public Utilities Commission



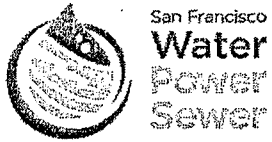
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# Future Policy Impacts

Services of the San Francisco Public Utilities Commission

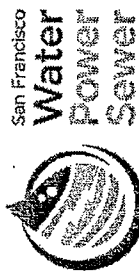
- All existing power programs and services included as a part of Power Revenue Pledge
- Standard “Separate System” Indenture definition included to describe any possible future expansion outside of current service/ scope
  - Required by credit markets for revenue pledge
  - Separate System would need to have dedicated revenues to cover costs



# Forms of Agreement

Services of the San Francisco Public Utilities Commission

1. Master Trust Indenture & First Supplemental
2. Preliminary Official Statement
3. Continuing Disclosure Certificate
4. Bond Purchase Contract with Wells Fargo



Services of the San Francisco Public Utilities Commission

# Questions?