



San Francisco  
Water Power Sewer

Services of the San Francisco Public Utilities Commission

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November 19, 2014

Angela Calvillo  
Clerk of the Board  
1 Dr. Carlton B. Goodlett Place  
City Hall, Room 244  
San Francisco, CA. 94102-4689

Dear Ms. Calvillo:

On June 24, 2014, the Board of Supervisors passed Ordinance Nos. 0108-14 (File No. 140484) to authorize the issuance of Water Enterprise Revenue Bonds (the "Bonds") in an amount not to exceed \$209,171,566. The Bonds were authorized under the provisions of Proposition E (enacted by the voters November 5, 2002 and codified in San Francisco Charter Section 8B.124), which required the submission by the SFPUC of engineering, financial, and environmental certifications prior to the issuance of the Bonds (see section 2 of the Ordinance).

In accordance with the Ordinance, please find the required certifications covering all projects authorized to be financed under the terms of the Ordinance. Please cause the certificate to be put in File No. 140484 in accordance with the Ordinance.

Should you have any questions, please feel free to contact me.

Best regards,

Richard Morales  
Debt Manager  
Tel: 415-551-2973

RECEIVED  
BOARD OF SUPERVISORS  
SAN FRANCISCO  
2014 NOV 26 AM 10:07

- Edwin M. Lee**  
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- Anson Moran**  
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General Manager







# SAN FRANCISCO PLANNING DEPARTMENT

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**Certificate of City and County of San Francisco Planning Department Regarding Proposed  
Sale of Water Revenue Bonds and / or Other Forms of Indebtedness,  
including Commercial Paper, with a combined not to exceed issuance amount of  
\$209,171,566 for Capital Projects budgeted in Fiscal Years 2014-2015 and 2015-2016**

I, Sarah B. Jones, Environmental Review Officer of the Planning Department of the City and County of San Francisco (the Planning Department), hereby certify as follows:

1. As the Environmental Review Officer (ERO) of the Planning Department, I am authorized to certify as to the compliance of the San Francisco Public Utilities Commission (SFPUC) with applicable requirements of the California Environmental Quality Act. (CEQA).
2. After consultation with the SFPUC, I understand that the SFPUC proposes to sell Water Revenue Bonds and / or other forms of Indebtedness (the "Revenue Indebtedness") to finance certain improvements to the Water Enterprise of the City and County of San Francisco (the "City") including but not limited to projects identified in the Water System Improvement Program (WSIP). The improvements proposed for financing include those projects described in the following document, attached to this Certificate as Exhibit A and may represent a subset of the total available authorization.
3. I understand that Section 8B.124 of the City Charter grants authority to the City's Board of Supervisors to approve the issuance of Revenue Indebtedness, including revenue bonds and commercial paper, by ordinance upon two-thirds vote of its members and under certain conditions. The draft ordinance to be approved by the Board is attached as Exhibit B.
4. I understand that one of the conditions to the Board of Supervisor's authorization of such Revenue Indebtedness is the delivery of a certificate of the Planning Department regarding the projects or additional to be financed under the authorization.
5. The San Francisco Planning Commission certifies Environmental Impact Reports as they are completed pursuant to CEQA. In addition, the Planning Department approves Initial Study/Mitigated Negative Declarations, and the ERO approves Categorical Exemptions.
6. Based on a preliminary review of the Projects, and discussions with the SFPUC regarding the requirements for undertaking such additional Projects, I certify that the Projects under the jurisdiction of the SFPUC to be funded with proceeds of the Revenue Indebtedness, as described in the Ordinances, (a) comply with applicable requirements of CEQA, or (b) are not considered to be projects under CEQA at this time and will comply with CEQA if and when they are defined. Pursuant to the provisions of Chapter 31 of the San Francisco Administrative Code, any additional Project to be financed will comply with such applicable requirements prior to any draw on any Revenue Indebtedness proceeds to finance the acquisition or construction of such facilities.

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July 7, 2014  
SFPUC FY2014-15 & 2015-16 Water Revenue Bonds  
Page 2

In witness whereof, the undersigned has executed this certification as of this 7 day of July, 2014



SARAH B. JONES  
Environmental Review Officer

**EXHIBIT A**  
**WATER ENTERPRISE REVENUE BONDS AND OTHER FORMS OF INDEBTEDNESS**  
**FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS**

<b>Program</b>	<b>Project Number</b>	<b>Project Title</b>	<b>CEQA Compliance</b>
Regional Projects	CUW272	Regional Water Treatment Program - Sunol	The subject projects are included in the Drought Planning Upgrade Projects 2014 which would qualify for a statutory exemption under CEQA Guidelines Section 15269(c), Emergency Projects.
Regional Projects	CUW27700	Sunol Yard Upgrade	Notice of Environmental Review for the Sunol Long Term Improvements Project was issued by the San Francisco Planning Department on March 19, 2014 under Planning Department Case Number 2012.0055E. Preparation of a mitigated negative declaration is anticipated.
Regional Projects	CUW374	Calaveras Dam -- WSIP Augmentation	A Final Environmental Impact Report was certified by the San Francisco Planning Commission on January 27, 2011 under Planning Department Case Number 2005.0161E. Addenda to the Final EIR were issued December 13, 2012 and July 22, 2013. No additional environmental review is anticipated.
Regional Projects	CUW359	New Irvington Tunnel	A Final Environmental Impact Report was certified by the San Francisco Planning Commission on November 5, 2009 under Planning Department Case Number 2005.0162E. An addendum to the Final EIR was issued September 28, 2011. No additional environmental review is anticipated.
Regional Projects	CUW371	Crystal Springs/San Andreas Upgrade	A Final Environmental Impact Report was certified by the San Francisco Planning Commission on April 22, 2010 under Planning Department Case Number 2007.1255E. An addendum to the Final EIR was issued September 1, 2010. No additional environmental review is anticipated.

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**WATER ENTERPRISE REVENUE BONDS AND OTHER FORMS OF INDEBTEDNESS**  
**FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS**

<b>Program</b>	<b>Project Number</b>	<b>Project Title</b>	<b>CEQA Compliance</b>
Regional Projects	CUW30103	Regional Groundwater Storage & Recovery	A Draft Environmental Impact Report was issued by the San Francisco Planning Department on April 10, 2009 under Planning Department Case Number 2008.1396E. Certification of the Final EIR is anticipated in July 2014.
Local Projects	CUW28000	Local Water Conveyance Distribution	The SFPUC would initiate CEQA compliance for individual projects as they are designed. Most individual projects are anticipated to either qualify for a statutory exemption (pipelines less than one mile in length) under Public Resources Code Section 21080.21 or categorical exemption under CEQA Guidelines Section 15302.
Local Projects	CUW282	College Hill Reservoir Outlet Structure Retrofit	Planning Phase activity would be initiated during Fiscal Year 2016 which would not fall within the definition of a "project" under CEQA Guidelines Section 15378 because planning activity during Fiscal Year 2016 would not commit to a specific project. Based on the nature of the required retrofit work, preparation of a Categorical Exemption for CEQA compliance is anticipated
Local Projects	CUW283	McLaren Park Pump Station Upgrades	Planning Phase activity would be initiated during Fiscal Year 2016 which would not fall within the definition of a "project" under CEQA Guidelines Section 15378 because planning activity during Fiscal Year 2016 would not commit to a specific project. Based on the nature of the required retrofit work, preparation of a Categorical Exemption for CEQA compliance is anticipated

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**FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS**

Program	Project Number	Project Title	CEQA Compliance
Local Projects	CUW284	Merced Manor Reservoir Facilities Repairs	<p>Planning Phase activity would be initiated during Fiscal Year 2017 which would not fall within the definition of a "project" under CEQA Guidelines Section 15378 because planning activity during Fiscal Year 2017 would not commit to a specific project. Based on the nature of the required repair work, preparation of a Categorical Exemption for CEQA compliance is anticipated</p>
Local Projects	CUW68800	Buildings and Grounds Improvements - Local	<p>As the individual projects are defined, the appropriate CEQA compliance document would be prepared. Funding for the Environmental Phase for these projects would be included in FY2015 and FY2016. A categorical exemption determination was issued June 18, 2012 under Planning Department Case Number 2012.0232E under CEQA Guidelines Section 15301 for the Lake Merced Boathouse Improvements Project. A categorical exemption determination was issued March 28, 2011 under Planning Department Case Number 2010.1020E under CEQA Guidelines Section 15302 for the City Distribution Division Fueling Station Replacement Project. It is anticipated that other individual projects would qualify for categorical exemption determinations</p>
Local Projects	CUW28201	Systems Monitoring and Control	<p>As the individual projects are defined, the appropriate CEQA compliance document would be prepared. Funding for the Environmental Phase for these projects would be included in FY2015. It is anticipated that the individual projects would qualify for categorical exemption determinations</p>

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**FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS**

<b>Program</b>	<b>Project Number</b>	<b>Project Title</b>	<b>CEQA Compliance</b>
Hetch Hetchy Water Projects (HHWP)	CUH10001	San Joaquin Pipeline Rehabilitation	A Final Mitigated Negative Declaration was issued by the San Francisco Planning Department on November 2, 2010 under Planning Department Case Number 2007.1129E. No additional environmental review is anticipated.
HHWP	CUH100	Priest Reservoir Lining Water Quality	Once the proposed project is defined, the appropriate CEQA compliance document would be prepared. It is anticipated a mitigated negative declaration would be prepared. Construction within waters of the United States or waters of the State would require applications for and issuance of permits/approvals from various environmental resource agencies and may require compliance with the National Environmental Policy Act (NEPA).
HHWP	CUH10003	Lower Cherry Aqueduct	A statutory exemption determination was issued on January 31, 2014 under CEQA Guidelines Section 15269.
HHWP	CUH10002	Mountain Tunnel Rehabilitation/Bypass	Planning and design phases for the Adit and Access Improvement Project would be initiated in Fiscal Year 2015. Planning phase for the Mountain Tunnel Rehabilitation would be initiated in Fiscal Year 2015 and would continue in Fiscal Year 2016. Preparation of an environmental impact report is anticipated.



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**FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS**

<b>Program</b>	<b>Project Number</b>	<b>Project Title</b>	<b>CEQA Compliance</b>
HHWP	CUH10206	O'Shaughnessy Outlet Works	Once the proposed project is defined, the appropriate CEQA compliance document would be prepared. It is anticipated a mitigated negative declaration would be prepared. Addition of a hydroelectric generating unit may require licensing by the U. S. Federal Energy Regulatory Commission (FERC) which would require compliance with the National Environmental Policy Act (NEPA). Preparation of an environmental assessment (EA) is anticipated under NEPA.
HHWP	CUH10204	Kirkwood Penstock	Once the proposed project is defined, the appropriate CEQA compliance document would be prepared. It is anticipated installation of monitoring and instrumentation equipment would qualify for a categorical exemption determination
HHWP	CUH102	Cherry Reservoir Valves	Once the proposed project is defined, the appropriate CEQA compliance document would be prepared. Valves to be replaced are located in a valve house outside the Reservoir. The proposed project would not require replacement or expansion of the valve house. Preparation of a categorical exemption is anticipated.

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**WATER ENTERPRISE REVENUE BONDS AND OTHER FORMS OF INDEBTEDNESS**  
**FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS**

<b>Program</b>	<b>Project Number</b>	<b>Project Title</b>	<b>CEQA Compliance</b>
HHWP	CUH10203	Dam Condition Assessment & Repair	Planning phase activities would be initiated in Fiscal Year 2015 and would continue in Fiscal Year 2016. Condition assessment that would not involve ground-disturbing activity would not fall within the definition of a "project" under CEQA Guidelines Section 15378. Should geotechnical investigations be required, such information collection likely would be categorically exempt under CEQA Guidelines Section 15306.
HHWP	CUH102	Cherry Spillway	Planning phase activities would be initiated in Fiscal Year 2015 and the Design phase would be initiated in Fiscal Year 2016. Once the proposed project is defined, the appropriate CEQA compliance document would be prepared. It is anticipated a mitigated negative declaration would be prepared
HHWP	CUH102	Moccasin Wastewater Treatment Plant	Once the project is defined, compliance with CEQA would be required. Addition of new structures such as the effluent pump station could represent a physical expansion of the Treatment Plant. Preparation of a mitigated negative declaration is anticipated, but potential expansion of the Treatment Plant capacity potentially may trigger preparation of an environmental impact report.
HHWP	CUH10201	Microwave System	A Final Mitigated Negative Declaration was issued on June 27, 2013 under Planning Department Case Number 2012.0183E. No additional environmental review is anticipated.

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**FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS**

<b>Program</b>	<b>Project Number</b>	<b>Project Title</b>	<b>CEQA Compliance</b>
HHWP	CUH10214	Hetch Hetchy Facilities – New Construction & Upgrades – Moccasin	Once the proposed project is defined, the appropriate CEQA compliance document would be prepared. It is anticipated a mitigated negative declaration would be prepared, depending on the location and type of new construction.
HHWP	CUH10202	Hetch Hetchy Facilities New Construction	A categorical exemption determination was issued November 1, 2012 under CEQA Guidelines Section 15303 under Planning Department Case Number 2012.1204E for the Moccasin Control and Server Building Project.
HHWP	CUH10209	Road Improvements	Maintenance activities of existing roads and bridges which would not involve replacement, expansion or excavation are anticipated to be categorically exempt from environmental review under CEQA. Once defined, projects which would involve removal and replacement or relocation of bridges would have to address potential effects on historical resources and may require the preparation of mitigated negative declarations or environmental impact reports. Construction within waters or the United States or waters of the State would require applications for and issuance of permits/approvals from various environmental resource agencies and may require compliance with the National Environmental Policy Act (NEPA).

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**WATER ENTERPRISE REVENUE BONDS AND OTHER FORMS OF INDEBTEDNESS**  
**FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS**

<b>Program</b>	<b>Project Number</b>	<b>Project Title</b>	<b>CEQA Compliance</b>
HHWP	CUH10210	Hetchy Fiber Projects	Design activities would be initiated in Fiscal Year 2015 and would continue in Fiscal Year 2016. Once the proposed project is defined, the appropriate CEQA compliance document would be prepared. It is anticipated a mitigated negative declaration would be prepared.
HHWP	CUH10208	Remote Terminal Unit Replacement	The Bureau of Environmental Management anticipates the proposed activities would not fall within the definition of a "project" under CEQA Guidelines Section 15378.
HHWP	CUH10211	Facilities Security	Physical changes to Hetch Hetchy Water & Power facilities such as fence replacement or relocation would require compliance with CEQA. Such security improvements are anticipated to be categorically exempt from environmental review under CEQA unless there is a potential to encroach on environmentally sensitive areas.
HHWP	CUH10213	Communication Systems Upgrade	A Final Mitigated Negative Declaration was issued by the San Francisco Planning Department on April 1, 2008 under Planning Department Case Number 2005.0883E. No additional environmental review is anticipated.

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<b>Program</b>	<b>Project Number</b>	<b>Project Title</b>	<b>CEQA Compliance</b>
HHWP	CUH102	Early Intake Dam Rehabilitation	The Planning Phase activities would be initiated and continue during the subject fiscal years and would not represent a commitment to a specific project. Planning activity during this period, without a commitment to a specific rehabilitation project would not fall within the definition of a "project" under CEQA Guidelines Section 15378. As the dam is an historic property, future rehabilitation may trigger preparation of an MND or EIR.

AMENDED IN COMMITTEE  
6/11/14

FILE NO. 140484

ORDINANCE NO.

1 [SFPUC Water Revenue Bond Issuance----Not to Exceed \$209,171,566~~290,431,536~~]

2  
3 **Ordinance approving the issuance and sale of water revenue bonds by the San**  
4 **Francisco Public Utilities Commission in an aggregate principal amount not to**  
5 **exceed \$209,171,566~~290,431,536~~ to finance the costs of various capital water projects**  
6 **benefitting the Water Enterprise pursuant to amendments to the Charter of the City**  
7 **and County of San Francisco enacted by the voters on November 5, 2002 as**  
8 **Proposition E; declaring the Official Intent of the Commission to Reimburse Itself with**  
9 **one or more issues of tax-exempt bonds; and ratifying previous actions taken in**  
10 **connection therewith.**

11 NOTE: Additions are single-underline italics Times New Roman;  
12 deletions are ~~strike-through italics Times New Roman~~.  
13 Board amendment additions are double-underlined;  
14 Board amendment deletions are ~~strikethrough normal~~.

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

15 Section 1. Findings. The Board of Supervisors (the "Board") of the City hereby finds  
16 and declares as follows:

17 A. On November 5, 2002, the voters of the City and County of San Francisco (the  
18 "City") approved Proposition E ("Proposition E"), which among other things, authorized the  
19 San Francisco Public Utilities Commission (the "Commission") issue revenue bonds,  
20 including notes, commercial paper or other forms of indebtedness, when authorized by  
21 ordinance approved by a two-thirds vote of the Board of Supervisors, for the purpose of  
22 reconstructing, replacing, expanding, repairing or improving water facilities or clean water  
23 facilities or combinations of water and clean water facilities under the jurisdiction of the  
24 Commission; and  
25

1           B. The Commission adopted the Amended and Restated Indenture dated as of  
2 January 1, 2002, as further amended and supplemented from time to time (the "Indenture"),  
3 between the Commission and U. S. Bank National Association and in connection therewith,  
4 has from time to time issued revenue bonds to finance projects benefitting the Water  
5 Enterprise; and

6           C. By Resolution 14-00032 adopted by the Commission on February 11, 2014 (the  
7 "Commission Resolution") the Commission has determined to issue water revenue bonds  
8 (the "Revenue Bonds") to finance the costs of various capital water projects benefitting the  
9 Water Enterprise (the "Capital Improvement Projects" such projects being more fully  
10 described in the Commission Resolution), pursuant to Proposition E, and has formally  
11 requested this Board of Supervisors to authorize the issuance and sale of water revenue  
12 bonds for such purposes, such Commission Resolution being on file with the Clerk of the  
13 Board in File No. 140484, which is hereby declared to be a part of this Ordinance as if set  
14 forth fully herein; and

15           D. In order to finance the costs of the Capital Improvement Projects, the Board now  
16 desires to authorize the issuance and sale of water revenue bonds for such purposes; and

17           E. The Commission has paid, beginning no earlier than 60 days prior to the  
18 adoption of this Ordinance and will pay, on and after the date hereof, certain expenditures  
19 (the "Expenditures") in connection with the acquisition, construction and/or equipping of the  
20 Capital Improvement Projects, and

21           F. This Board of Supervisors, on behalf of the Commission, adopts this Ordinance  
22 as official action of the Commission in order to comply with Treasury Regulation §1.150-2  
23 and any other regulations of the Internal Revenue Service relating to the qualification for  
24 reimbursement of Commission expenditures incurred prior to the date of issue of the Water  
25 Revenue Bonds, and

1           Section 2. Approval of the Water Revenue Bonds. The Board hereby approves the  
2 issuance and sale of the Water Revenue Bonds from time to time by the Commission  
3 pursuant to Proposition E and in accordance with the Commission Resolution in an  
4 aggregate principal amount not to exceed ~~\$209,171,566~~ ~~290,431,536~~ (inclusive of financing  
5 costs), at a maximum rate or rates of interest of not to exceed twelve percent (12%) per  
6 annum to finance a portion of the costs of the design; acquisition and construction of the  
7 Capital Improvement Projects. The Commission is hereby authorized to determine the  
8 timing, amount and manner of sale (i.e., competitive or negotiated) of each series of Water  
9 Revenue Bonds issued pursuant to this authorization; provided however, the Commission's  
10 authorization to issue Water Revenue Bonds is subject to approval by the Commission's  
11 Board of the form of substantially final offering document related to such bonds and the filing  
12 with its Board and the Clerk of the Board any certifications required by Proposition E prior to  
13 the issuance of any bonds herein authorized.

14           Section 3. Declaration of Official Intent. The Board, on behalf of the Commission ,  
15 hereby declares the official intent of the Commission to reimburse the Commission with  
16 proceeds of the Water Revenue Bonds for the Expenditures with respect to the Capital  
17 Improvement Projects made on and after a date that is no more than 60 days prior to the  
18 adoption of this Ordinance. The Commission reasonably expects on the date hereof that it  
19 will reimburse the Expenditures with proceeds of the Water Revenue Bonds. Each said  
20 Expenditure was and will be either (A) of a type properly chargeable to a capital account  
21 under general federal income tax principles (determined in each case as of the date of the  
22 Expenditure), (B) a cost of issuance with respect to the Water Revenue Bonds, (C) a  
23 nonrecurring items that is not customarily payable from current revenues, or (D) a grant to pay  
24 a party that is not related to or an agent of the issuer so long as such grand does not impose  
25 any obligation or condition (directly or indirectly) to repay any amount to or for the benefit of



1 the Commission. The maximum principal amount of the Water Revenue Bonds to be issued  
2 for the Capital Improvement Projects is ~~\$209,171,566~~ 290,431,536 (inclusive of financing costs).

3 The Commission will make a reimbursement allocation, which is a written allocation  
4 by the Issuer that evidences the Commission's use of proceeds of the Water Revenue  
5 Bonds to reimburse an Expenditure, no later than 18 months after the later of the date on  
6 which the Expenditure is paid or the component of the Capital Improvement Projects is  
7 placed in service or abandoned, but in no event more than three years after the date on  
8 which the Expenditure is paid. The Commission recognizes that exceptions are available for  
9 certain "preliminary expenditures," costs of issuance, certain *de minimis* amounts,  
10 expenditures by "small issuers" (based on the year of issuance and not the year of  
11 expenditure) and expenditures for construction projects of at least 5 years.

12 Section 4. General Authority. The Controller, Treasurer, the City Attorney and other  
13 officers of the City and their duly authorized deputies and agents are hereby authorized and  
14 directed, jointly and severally, to take such actions and to execute and deliver such  
15 certificates, agreements, requests or other documents, as they may deem necessary or  
16 desirable to facilitate the issuance, sale and delivery of the Water Revenue Bonds, to obtain  
17 bond insurance or other credit enhancements with respect to the Water Revenue Bonds, to  
18 obtain surety, to obtain title and other insurance with respect to the facilities to be financed,  
19 and otherwise to carry out the provisions of this Ordinance.

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

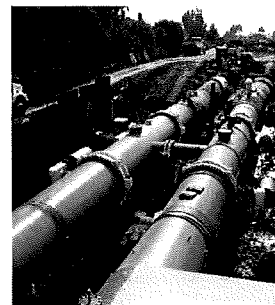
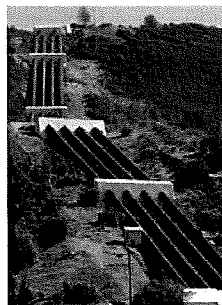
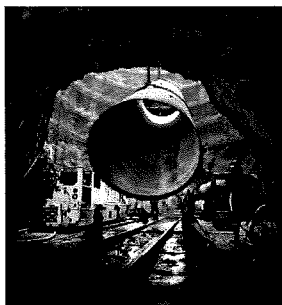
22 Section 6. File Documents. All documents referred to as on file with the Clerk of the  
23 Board are in File No. 140484.

1           Section 7. Effective Date. Pursuant to Charter Section 14.102, this Ordinance shall  
2 take effect thirty (30) days after its adoption.

3  
4 APPROVED AS TO FORM:  
5 DENNIS J. HERRERA, City Attorney

6 By: \_\_\_\_\_  
7       MARK D. BLAKE  
8       Deputy City Attorney

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# Water Enterprise Financial Projections

November 6, 2014



**BARTLE WELLS ASSOCIATES**  
INDEPENDENT PUBLIC FINANCE ADVISORS

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**San Francisco Public Utilities Commission  
Qualified Independent Consultant Report  
Water Enterprise Financial Projections**

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-

**Table 1**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Water Enterprise Financial Projections**

	FY 2014/15	FY 2015/16	FY 2016/17	FY 2017/18	FY 2018/19
Retail Water Rate Adjustments	12.0%	12.0%	10.0%	7.0%	7.0%
Change in Retail Demand	-	-	-	-	-
Retail Water Sales (ccf)	33,181,818	33,181,818	33,181,818	33,181,818	33,181,818
Growth in Wholesale Demand	-4.41%	-	-	-	-
Wholesale Water Sales (ccf)	69,779,412	69,779,412	69,779,000	69,779,000	69,779,000
Wholesale Water Sales (mgd)	143.0	143.0	143.0	143.0	143.0
Wholesale Water Rate (\$/ccf)	\$2.93	\$3.52	\$3.54	\$3.74	\$4.27
Wholesale Fixed Meter Charges (est.)	\$4,500,000	\$4,590,000	\$4,682,000	\$4,776,000	\$4,872,000
Interest Earnings Rate	0.5%	0.5%	1.0%	1.5%	2.0%
O&M Cost Escalation	included	included	3.0%	3.0%	3.0%
<b>Beginning Undesignated Fund Reserves</b>	<b>\$221,718,000</b>	<b>\$144,702,000</b>	<b>\$140,914,620</b>	<b>\$151,478,069</b>	<b>\$172,611,161</b>
<b>Annual Revenues</b>					
Retail Water Charges	209,238,000	234,347,000	257,782,000	275,827,000	295,135,000
Wholesale Water Charges	221,999,000	250,214,000	251,700,000	265,749,000	302,828,000
Interest Income	1,109,000	724,000	1,409,000	2,272,000	3,452,000
Interest on BABs Reserve Funds	473,000	473,000	946,000	946,000	946,000
Capacity Fee Recovery	2,500,000	3,000,000	1,000,000	1,000,000	1,000,000
Other Miscellaneous Income	22,454,000	23,127,620	23,521,449	24,227,092	24,953,905
<b>Total Annual Revenues</b>	<b>457,773,000</b>	<b>511,885,620</b>	<b>536,358,449</b>	<b>570,021,092</b>	<b>628,314,905</b>
<b>Operation &amp; Maintenance Expenses</b>					
Personnel	86,300,000	86,500,000	89,095,000	91,768,000	94,521,000
Non-Personal Services	15,982,000	16,461,000	16,955,000	17,464,000	17,988,000
Materials/Supplies/Equipment	16,080,000	16,562,000	17,059,000	17,571,000	18,098,000
Light, Heat, and Power	10,073,000	10,375,000	10,686,000	11,007,000	11,337,000
Services of SFPUC Bureaus & COWCAP	45,600,000	45,000,000	46,350,000	47,741,000	49,173,000
Services of Other Departments	9,866,000	9,102,000	9,375,000	9,656,000	9,946,000
Hetch Hetchy Assessment	34,308,000	35,338,000	36,398,000	37,490,000	38,615,000
<b>Total O&amp;M Expenses</b>	<b>218,209,000</b>	<b>219,338,000</b>	<b>225,918,000</b>	<b>232,697,000</b>	<b>239,678,000</b>
<b>Annual Debt Service, Net of Capitalized Interest</b>					
Outstanding Debt Service	246,165,000	269,998,000	280,756,000	286,125,000	297,647,000
BABs Subsidies on Outstanding Bonds	(23,921,000)	(23,921,000)	(23,846,000)	(23,694,000)	(23,528,000)
Add back 7.2% sequestration reduction	1,722,000	1,722,000	1,717,000	1,706,000	1,694,000
Projected Future Bonds	294,000	5,901,000	11,539,000	23,385,000	38,436,000
Less Interest on Tax-Exempt Reserve Funds	1,447,000	1,443,000	2,370,000	2,370,000	2,370,000
Less BAWSCA-Related Bond Defeasance	(23,180,000)	(19,133,000)	(17,813,000)	(13,320,000)	(3,585,000)
<b>Total Debt Service</b>	<b>202,527,000</b>	<b>236,010,000</b>	<b>254,723,000</b>	<b>276,572,000</b>	<b>313,034,000</b>
<b>Other Non-Operating Expenses</b>					
Local & Regional Repairs & Replacements	94,251,000	40,329,000	19,341,000	19,952,000	72,804,000
Programmatic Projects	13,554,000	13,153,000	18,639,000	12,413,000	8,471,000
525 Golden Gate Lease & O&M	12,570,000	12,671,000	12,778,000	12,888,000	12,998,000
Less Federal Bond Subsidy	(1,938,000)	(1,938,000)	(1,938,000)	(1,938,000)	(1,938,000)
Less Other Reimbursements	(4,384,000)	(3,890,000)	(3,666,000)	(3,696,000)	(3,727,000)
Comm'l Paper Payments, Subordinate	0	0	0	0	0
<b>Total Other Non-Op Expenses</b>	<b>114,053,000</b>	<b>60,325,000</b>	<b>45,154,000</b>	<b>39,619,000</b>	<b>88,608,000</b>
<b>Total Expenses</b>	<b>534,789,000</b>	<b>515,673,000</b>	<b>525,795,000</b>	<b>548,888,000</b>	<b>641,320,000</b>
<b>Revenues Less Expenses</b>	<b>(77,016,000)</b>	<b>(3,787,380)</b>	<b>10,563,449</b>	<b>21,133,092</b>	<b>(13,005,095)</b>
<b>Ending Fund Reserves</b>	<b>144,702,000</b>	<b>140,914,620</b>	<b>151,478,069</b>	<b>172,611,161</b>	<b>159,606,065</b>
<b>Annual Revenues</b>	<b>457,773,000</b>	<b>511,885,620</b>	<b>536,358,449</b>	<b>570,021,092</b>	<b>628,314,905</b>
<b>Fund Reserves Designated as Revenues</b>	<b>144,702,000</b>	<b>140,914,620</b>	<b>140,914,620</b>	<b>151,478,069</b>	<b>159,606,065</b>
<b>Operating &amp; Maintenance Expenses</b>	<b>(218,209,000)</b>	<b>(219,338,000)</b>	<b>(225,918,000)</b>	<b>(232,697,000)</b>	<b>(239,678,000)</b>
<b>Net Revenues</b>	<b>384,266,000</b>	<b>433,462,240</b>	<b>451,355,069</b>	<b>488,802,161</b>	<b>548,242,970</b>
<b>Annual Debt Service</b>	<b>202,527,000</b>	<b>236,010,000</b>	<b>254,723,000</b>	<b>276,572,000</b>	<b>313,034,000</b>
<b>Debt Service Coverage, Per Indenture</b>	<b>1.90</b>	<b>1.84</b>	<b>1.77</b>	<b>1.77</b>	<b>1.75</b>
<b>Debt Service Coverage, Traditional Definition</b>	<b>1.18</b>	<b>1.24</b>	<b>1.22</b>	<b>1.22</b>	<b>1.24</b>

**Table 2**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Cash Flow Assumptions**

Retail Water Rate Adjustments	Retail water rate adjustments are based on the SFPUC's adopted rate increases through FY 2017/18 and include projected rate increases as shown thereafter.
Retail Water Sales	Retail water sales are based on SFPUC projections for FY 2014/15 and remain constant in future years.
Wholesale Water Sales	Wholesale water sales projections based on SFPUC projections for FY 2014/15 and remain constant in future years.
Wholesale Water Rates	Based on SFPUC wholesale water rate projections.
Wholesale Meter Charges	Estimated at \$4.5 million in FY 2014/15 and escalate at the annual rate of 2%.
Beginning Fund Reserves	Beginning undesignated fund reserves as of June 30, 2014 based on SFPUC estimates.
Retail Water Charges	Based on SFPUC revenue projections for FY 2014/15 escalating to account for projected rate increases and changes in projected demand, if any.
Wholesale Water Charges	Based on the projected volume of wholesale water sales multiplied by the projected wholesale rate, plus projected wholesale customer meter charges.
Interest Income	Interest earnings estimated based on the projected interest rate shown on the table multiplied by beginning fund reserves each year.
Other Miscellaneous Income	Based on SFPUC projections.
Interest on Bond Reserve Funds	Interest earned on reserve funds is accounted for as an offset to annual debt service payments. Interest calculations are shown on Table 6.
BABs Subsidies	BABs subsidies are accounted for as an offset to annual debt service.
Operation & Maintenance Expenses	Based on SFPUC projections through FY 2015/16 and subsequently escalate at the annual rate of 3.0% thereafter.
Capital Projects	Based on Water 10-Yr CIP FY15-24 v1
Programmatic Projects	Based on Water 10-Year CIP FY2015-2024 V1
Hetchy Projects	Based on Hetchy 10-Yr CIP FY15-24 5-13
Debt Service Assumptions	Future debt projections shown on Table 4. Key assumptions for Water Enterprise project financing include: a) 30-year repayment terms, b) average annual interest rates of 4.5% for 2014 Bonds, 5.0% for 2015 Bonds, and 5.5% for all future bonds, c) capitalized interest for 2.5 years at 95% of interest payments, d) principal payments starting year 3, and e) no debt service reserve funds, e) assumes bonds are issued each fiscal year corresponding with annual funding needs. Debt projections for Hetchy projects are based on similar assumptions with the following exceptions: a) only one year of capitalized interest, and b) principal payments begin in year 2.
Annual Debt Service	Includes debt service coming due each fiscal year on outstanding and projected debt, offset by the application of projected capitalized interest. Future debt service is based on BWA projections. Note that pursuant to the Indenture, as a procedural requirement the SFPUC is required to make monthly prepayments to the trustee of 1/12th principal and 1/6th semi-annual debt service toward each upcoming bond payment. The amounts shown reflect the amount coming due each fiscal year; not the amounts procedurally required to be prepaid each fiscal year.
Other Non-Operating Expenses	Based on SFPUC projections.
Net Revenues	Pursuant to the Indenture, Net Revenues are defined as Annual Revenues (excluding interest earnings on any bond funds including the reserve fund, capitalized interest fund, and improvement fund; but including fund reserves available to pay debt service assuming the Commission determined such reserves should be "Revenues" under the Indenture) less Operation and Maintenance Expenses.
Fund Reserves Designated as Revenues	Assumes the Commission determines that available fund reserves are "Revenues" under the Indenture. Available fund reserves are estimated at the lowest of either beginning or ending fund reserves in each fiscal year.
Debt Service Coverage, Per Indenture	Net Revenues per Indenture divided by Annual Debt Service.
Debt Service Coverage, Traditional Definition	Shown for informational purposes only, calculated based on total annual revenues less annual operating and maintenance expenses, divided by annual debt service.

**Table 3**

**San Francisco Public Utilities Commission  
Qualified Independent Consultant Report  
10-Year Capital Improvement Program**

	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20	2020/21
<b>REGIONAL WATER IMPROVEMENTS</b>							
Water Treatment Program	8,841,000	3,647,000	2,052,000	1,889,000	1,894,000	1,901,000	1,908,000
Water Transmission Program	9,196,000	11,631,000	12,971,000	8,515,000	57,285,000	51,985,000	16,022,000
Water Supply & Storage Program	2,055,000	1,194,000	1,739,000	1,949,000	2,810,000	17,832,000	310,000
Watersheds & Land Management	1,408,000	2,804,000	1,504,000	1,504,000	1,504,000	1,504,000	1,504,000
Communication & Monitoring Program	3,500,000	2,000,000	550,000	550,000	500,000	500,000	500,000
Buildings and Grounds Programs	500,000	27,365,000	5,165,000	4,943,000	786,000	795,000	804,000
<b>Subtotal</b>	<b>25,500,000</b>	<b>48,641,000</b>	<b>23,981,000</b>	<b>19,350,000</b>	<b>64,779,000</b>	<b>74,517,000</b>	<b>21,048,000</b>
<b>OTHER CAPITAL IMPROVEMENTS</b>							
Local Water	68,101,000	65,205,000	65,025,000	58,425,000	55,200,000	55,200,000	55,200,000
Auxiliary Water Supply System	85,928,000	-	-	-	-	-	-
Candidates: Base Funded by WSIP	72,178,000	41,074,000	35,875,000	6,574,000	5,500,000	272,000	-
Candidates: Other Projects	650,000	3,448,000	1,568,000	19,149,000	1,360,000	-	-
<b>Subtotal</b>	<b>226,857,000</b>	<b>109,727,000</b>	<b>102,468,000</b>	<b>84,148,000</b>	<b>62,060,000</b>	<b>55,472,000</b>	<b>55,200,000</b>
<b>SUBTOTAL (Without Candidates)</b>	<b>179,529,000</b>	<b>113,846,000</b>	<b>89,006,000</b>	<b>77,775,000</b>	<b>119,979,000</b>	<b>129,717,000</b>	<b>76,248,000</b>
<b>TOTAL (With Candidates)</b>	<b>252,357,000</b>	<b>158,368,000</b>	<b>126,449,000</b>	<b>103,498,000</b>	<b>126,839,000</b>	<b>129,989,000</b>	<b>76,248,000</b>
<b>FUNDING SOURCES</b>							
Pay-Go Revenue Funding	29,219,000	37,484,000	18,341,000	18,952,000	71,804,000	76,804,000	41,371,000
Revenue Bonds	72,178,000	117,884,000	107,108,000	83,546,000	54,035,000	52,185,000	33,877,000
GO Bonds	85,928,000	0	0	0	0	0	0
BAWSA Prepayments	62,532,000	0	0	0	0	0	0
Capacity Charges	2,500,000	3,000,000	1,000,000	1,000,000	1,000,000	1,000,000	1,000,000
<b>TOTAL</b>	<b>252,357,000</b>	<b>158,368,000</b>	<b>126,449,000</b>	<b>103,498,000</b>	<b>126,839,000</b>	<b>129,989,000</b>	<b>76,248,000</b>
Funding Shortfall	0	0	0	0	0	0	0

Source: Water 10-YR CIP FY15-24 v1

**Table 4**

**San Francisco Public Utilities Commission  
Qualified Independent Consultant Report  
Projected Future Bond Issues - Water Enterprise Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<b>Anticipated Bond Series</b>	<b>2014A</b>	<b>2015A</b>	<b>2016A</b>	<b>2017A</b>	<b>2018A</b>	<b>2019A</b>
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	05/01/17	05/01/18	05/01/19	05/01/20	05/01/21	05/01/22
First Principal Payment Date	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21	11/01/22
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Bond Issue Size</b>	<b>\$93,230,000</b>	<b>\$135,630,000</b>	<b>\$124,930,000</b>	<b>\$97,460,000</b>	<b>\$63,040,000</b>	<b>\$60,870,000</b>
<b>Proceeds for Project Fund</b>	<b>82,132,000</b>	<b>117,884,000</b>	<b>107,108,000</b>	<b>83,546,000</b>	<b>54,035,000</b>	<b>52,185,000</b>
<b>Funding Target</b>						
Prior CIP Commitments	9,954,000	0	0	0	0	0
CIP Projects	72,178,000	117,884,000	107,108,000	83,546,000	54,035,000	52,185,000
<b>Total</b>	<b>82,132,000</b>	<b>117,884,000</b>	<b>107,108,000</b>	<b>83,546,000</b>	<b>54,035,000</b>	<b>52,185,000</b>
<b>Issuance Costs, Reserve &amp; Cap I Funds</b>						
Underwriter's Discount (Est. 0.70%)	653,000	949,000	875,000	682,000	441,000	426,000
Costs of Issuance (Max 0.50% or \$250K)	470,000	680,000	620,000	490,000	320,000	300,000
Bond Insurance	0	0	0	0	0	0
Reserve Requirement	0	0	0	0	0	0
Capitalized Interest*	9,963,000	16,107,000	16,319,000	12,730,000	8,234,000	7,952,000
Rounding	12,000	10,000	8,000	12,000	10,000	7,000
<b>Subtotal</b>	<b>11,098,000</b>	<b>17,746,000</b>	<b>17,822,000</b>	<b>13,914,000</b>	<b>9,005,000</b>	<b>8,685,000</b>
<b>Bond Term &amp; Interest Rate</b>						
Term (years)	30.0	30.0	30.0	30.0	30.0	30.0
Capitalized Interest Period (years)	2.5	2.5	2.5	2.5	2.5	2.5
Period to 1st Principal Pymt (years)	3.0	3.0	3.0	3.0	3.0	3.0
Principal Maturities	27	27	27	27	27	27
Estimated Average Interest Rate	4.50%	5.00%	5.50%	5.50%	5.50%	5.50%
<b>Debt Service</b>						
Interest Only Period	4,195,000	6,782,000	6,871,000	5,360,000	3,467,000	3,348,000
Principal Amortization Period	6,034,000	9,262,000	8,989,000	7,012,000	4,536,000	4,380,000

\* Capitalized interest projected at 95% of interest related to all projects other than Hetchy improvements for 2.5 years.



**Table 4**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Projected Future Bond Issues - Water Enterprise Projects**

**Water Enterprise Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Anticipated Bond Series	2014A	2015A	2016A	2017A	2018A	2019A
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	05/01/17	05/01/18	05/01/19	05/01/20	05/01/21	05/01/22
First Principal Payment Date	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21	11/01/22
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Principal Payments (Through 2026)</b>						
11/01/14						
05/01/15						
11/01/15						
05/01/16						
11/01/16						
05/01/17	1,838,445					
11/01/17						
05/01/18	1,921,175	2,480,925				
11/01/18						
05/01/19	2,007,628	2,604,971	2,117,849			
11/01/19						
05/01/20	2,097,972	2,735,220	2,234,330	1,652,169		
11/01/20						
05/01/21	2,192,380	2,871,981	2,357,218	1,743,039	1,068,672	
11/01/21						
05/01/22	2,291,037	3,015,580	2,486,865	1,838,906	1,127,449	1,031,885
11/01/22						
05/01/23	2,394,134	3,166,359	2,623,643	1,940,046	1,189,458	1,088,639
11/01/23						
05/01/24	2,501,870	3,324,677	2,767,943	2,046,748	1,254,879	1,148,514
11/01/24						
05/01/25	2,614,454	3,490,911	2,920,180	2,159,319	1,323,897	1,211,683
11/01/25						
05/01/26	2,732,105	3,665,456	3,080,790	2,278,082	1,396,711	1,278,325
11/01/26						

**Table 4**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Projected Future Bond Issues - Water Enterprise Projects**

**Water Enterprise Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Anticipated Bond Series	2014A	2015A	2016A	2017A	2018A	2019A
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	05/01/17	05/01/18	05/01/19	05/01/20	05/01/21	05/01/22
First Principal Payment Date	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21	11/01/22
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Interest Payments (Through 2026)</b>						
11/01/14						
05/01/15	2,097,500					
11/01/15	2,097,500					
05/01/16	2,097,500	3,391,000				
11/01/16	2,097,500	3,391,000	3,435,500			
05/01/17	2,097,500	3,391,000	3,435,500	2,680,000		
11/01/17	2,097,500	3,391,000	3,435,500	2,680,000	1,733,500	
05/01/18	2,056,135	3,391,000	3,435,500	2,680,000	1,733,500	
11/01/18	2,056,135	3,391,000	3,435,500	2,680,000	1,733,500	
05/01/19	2,012,909	3,328,977	3,435,500	2,680,000	1,733,500	
11/01/19	2,012,909	3,328,977	3,435,500	2,680,000	1,733,500	
05/01/20	1,967,737	3,263,853	3,377,259	2,680,000	1,733,500	
11/01/20	1,967,737	3,263,853	3,377,259	2,680,000	1,733,500	
05/01/21	1,920,533	3,195,472	3,315,815	2,634,565	1,733,500	
11/01/21	1,920,533	3,195,472	3,315,815	2,634,565	1,733,500	
05/01/22	1,871,204	3,123,673	3,250,992	2,586,632	1,704,112	
11/01/22	1,871,204	3,123,673	3,250,992	2,586,632	1,704,112	
05/01/23	1,819,656	3,048,283	3,182,603	2,536,062	1,673,107	
11/01/23	1,819,656	3,048,283	3,182,603	2,536,062	1,673,107	
05/01/24	1,765,788	2,969,124	3,110,453	2,482,711	1,640,397	
11/01/24	1,765,788	2,969,124	3,110,453	2,482,711	1,640,397	
05/01/25	1,709,496	2,886,007	3,034,334	2,426,425	1,605,887	
11/01/25	1,709,496	2,886,007	3,034,334	2,426,425	1,605,887	
05/01/26	1,650,670	2,798,734	2,954,029	2,367,044	1,569,480	
11/01/26	1,650,670	2,798,734	2,954,029	2,367,044	1,569,480	

**Table 4**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Projected Future Bond Issues - Water Enterprise Projects**

**Water Enterprise Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<b>Anticipated Bond Series</b>	<b>2014A</b>	<b>2015A</b>	<b>2016A</b>	<b>2017A</b>	<b>2018A</b>	<b>2019A</b>
<b>Anticipated Issuance Date</b>	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
<b>Capitalized Interest Through</b>	05/01/17	05/01/18	05/01/19	05/01/20	05/01/21	05/01/22
<b>First Principal Payment Date</b>	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21	11/01/22
<b>Final Maturity</b>	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Capitalized Interest Drawdown (Through 2026)</b>						
11/01/14						
05/01/15	1,992,625					
11/01/15	1,992,625					
05/01/16	1,992,625	3,221,450				
11/01/16	1,992,625	3,221,450				
05/01/17	1,992,625	3,221,450	3,263,725			
11/01/17		3,221,450	3,263,725			
05/01/18		3,221,450	3,263,725	2,546,000		
11/01/18			3,263,725	2,546,000		
05/01/19			3,263,725	2,546,000	1,646,825	
11/01/19				2,546,000	1,646,825	
05/01/20				2,546,000	1,646,825	1,590,300
11/01/20					1,646,825	1,590,300
05/01/21					1,646,825	1,590,300
11/01/21					1,646,825	1,590,300
05/01/22						1,590,300
11/01/22						1,590,300
05/01/23						1,590,300
11/01/23						1,590,300
05/01/24						1,590,300
11/01/24						1,590,300
05/01/25						1,590,300
11/01/25						1,590,300
05/01/26						1,590,300
11/01/26						1,590,300

**Table 4**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Projected Future Bond Issues - Water Enterprise Projects**

**Water Enterprise Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Anticipated Bond Series	2014A	2015A	2016A	2017A	2018A	2019A
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	05/01/17	05/01/18	05/01/19	05/01/20	05/01/21	05/01/22
First Principal Payment Date	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21	11/01/22
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Total Debt Service Net of Cap I (Through 2026)</b>						
11/01/14						
05/01/15	104,875					
11/01/15	104,875					
05/01/16	104,875	169,550				
11/01/16	104,875	169,550				
05/01/17	104,875	169,550	171,775			
11/01/17	3,935,945	169,550	171,775			
05/01/18	2,056,135	169,550	171,775	134,000		
11/01/18	3,977,310	5,871,925	171,775	134,000	86,675	
05/01/19	2,012,909	3,328,977	171,775	134,000	86,675	
11/01/19	4,020,537	5,933,948	5,553,349	134,000	86,675	83,700
05/01/20	1,967,737	3,263,853	3,377,259	134,000	86,675	83,700
11/01/20	4,065,709	5,999,072	5,611,589	4,332,169	86,675	
05/01/21	1,920,533	3,195,472	3,315,815	2,634,565	86,675	83,700
11/01/21	4,112,913	6,067,453	5,673,033	4,377,604	2,802,172	83,700
05/01/22	1,871,204	3,123,673	3,250,992	2,586,632	1,704,112	83,700
11/01/22	4,162,241	6,139,252	5,737,857	4,425,538	2,831,560	2,705,885
05/01/23	1,819,656	3,048,283	3,182,603	2,536,062	1,673,107	1,645,623
11/01/23	4,213,790	6,214,642	5,806,246	4,476,108	2,862,565	2,734,262
05/01/24	1,765,788	2,969,124	3,110,453	2,482,711	1,640,397	1,615,686
11/01/24	4,267,658	6,293,801	5,878,396	4,529,459	2,895,275	2,764,200
05/01/25	1,709,496	2,886,007	3,034,334	2,426,425	1,605,887	1,584,101
11/01/25	4,323,950	6,376,918	5,954,514	4,585,744	2,929,784	2,795,784
05/01/26	1,650,670	2,798,734	2,954,029	2,367,044	1,569,480	1,550,780
11/01/26	4,382,775	6,464,191	6,034,819	4,645,126	2,966,192	2,829,105

**Table 5**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Projected Future Bond Issues - Hetchy Projects**

**Hetchy Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<b>Anticipated Bond Series</b>	<b>2014A</b>	<b>2015A</b>	<b>2016A</b>	<b>2017A</b>	<b>2018A</b>	<b>2019A</b>
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20
First Principal Payment Date	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Bond Issue Size</b>	<b>\$83,830,000</b>	<b>\$78,510,000</b>	<b>\$81,160,000</b>	<b>\$84,990,000</b>	<b>\$93,240,000</b>	<b>\$151,180,000</b>
<b>Proceeds for Project Fund</b>	<b>79,235,000</b>	<b>73,830,000</b>	<b>75,936,000</b>	<b>79,523,000</b>	<b>87,233,000</b>	<b>141,455,000</b>
<b>Funding Target</b>						
<i>Prior Hetchy Commitments</i>	14,485,000	0	0	0	0	0
<i>Hetchy Power Bond Projects</i>	33,040,000	54,570,000	44,681,000	45,840,000	34,627,000	68,387,000
<i>Hetchy Water Bond Projects</i>	<u>31,710,000</u>	<u>19,260,000</u>	<u>31,255,000</u>	<u>33,683,000</u>	<u>52,606,000</u>	<u>73,068,000</u>
<b>Total</b>	<b>79,235,000</b>	<b>73,830,000</b>	<b>75,936,000</b>	<b>79,523,000</b>	<b>87,233,000</b>	<b>141,455,000</b>
<b>Issuance Costs, Reserve &amp; Cap I Funds</b>						
Underwriter's Discount (Est. 0.70%)	587,000	550,000	568,000	595,000	653,000	1,058,000
Costs of Issuance (Max 0.50% or \$250K)	420,000	390,000	410,000	420,000	470,000	760,000
Bond Insurance	0	0	0	0	0	0
Reserve Requirement	0	0	0	0	0	0
Capitalized Interest*	3,583,000	3,730,000	4,241,000	4,440,000	4,872,000	7,899,000
Rounding	5,000	10,000	5,000	12,000	12,000	8,000
<b>Subtotal</b>	<b>4,595,000</b>	<b>4,680,000</b>	<b>5,224,000</b>	<b>5,467,000</b>	<b>6,007,000</b>	<b>9,725,000</b>
<b>Bond Term &amp; Interest Rate</b>						
Term (years)	30.0	30.0	30.0	30.0	30.0	30.0
Capitalized Interest Period (years)	1.0	1.0	1.0	1.0	1.0	1.0
Period to 1st Principal Pymt (years)	2.0	2.0	2.0	2.0	2.0	2.0
Principal Maturities	28	28	28	28	28	28
Estimated Average Interest Rate	4.50%	5.00%	5.50%	5.50%	5.50%	5.50%
<b>Debt Service</b>						
Interest Only Period	3,772,000	3,926,000	4,464,000	4,674,000	5,128,000	8,315,000
Principal Amortization Period	5,325,000	5,270,000	5,747,000	6,019,000	6,603,000	10,706,000

\* Capitalized interest projected at 95% of interest related to all projects other than Hetchy improvements for 2.5 years.

**Table 5**

**San Francisco Public Utilities Commission  
Qualified Independent Consultant Report  
Projected Future Bond Issues - Hetchy Projects**

**Hetchy Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Anticipated Bond Series	2014A	2015A	2016A	2017A	2018A	2019A
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20
First Principal Payment Date	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Principal Payments (Through 2026)</b>						
11/01/14						
05/01/15						
11/01/15						
05/01/16						
11/01/16	1,552,599					
05/01/17						
11/01/17	1,622,466	1,344,290				
05/01/18						
11/01/18	1,695,477	1,411,504	1,283,497			
05/01/19						
11/01/19	1,771,773	1,482,080	1,283,497	1,344,066		
05/01/20						
11/01/20	1,851,503	1,556,184	1,354,089	1,417,989	1,474,535	
05/01/21						
11/01/21	1,934,821	1,633,993	1,428,564	1,495,979	1,555,634	2,390,821
05/01/22						
11/01/22	2,021,888	1,715,692	1,507,135	1,578,258	1,641,194	2,522,316
05/01/23						
11/01/23	2,112,873	1,801,477	1,590,027	1,665,062	1,731,460	2,661,043
05/01/24						
11/01/24	2,207,952	1,891,551	1,677,479	1,756,640	1,826,690	2,807,401
05/01/25						
11/01/25	2,307,310	1,986,128	1,769,740	1,853,255	1,927,158	2,961,808
05/01/26						
11/01/26	2,411,139	2,085,435	1,867,076	1,955,185	2,033,151	3,124,707

**Table 5**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Projected Future Bond Issues - Hetchy Projects**

	<b>Hetchy Projects</b>					
Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
<b>Anticipated Bond Series</b>	<b>2014A</b>	<b>2015A</b>	<b>2016A</b>	<b>2017A</b>	<b>2018A</b>	<b>2019A</b>
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20
First Principal Payment Date	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Interest Payments (Through 2026)</b>						
11/01/14						
05/01/15	1,886,000					
11/01/15	1,886,000					
05/01/16	1,886,000	1,963,000				
11/01/16	1,886,000	1,963,000				
05/01/17	1,851,067	1,963,000	2,232,000			
11/01/17	1,851,067	1,963,000	2,232,000			
05/01/18	1,814,561	1,929,393	2,232,000	2,337,000		
11/01/18	1,814,561	1,929,393	2,232,000	2,337,000		
05/01/19	1,776,413	1,894,105	2,196,704	2,337,000	2,564,000	
11/01/19	1,776,413	1,894,105	2,196,704	2,337,000	2,564,000	
05/01/20	1,736,548	1,857,053	2,161,408	2,300,038	2,564,000	4,157,500
11/01/20	1,736,548	1,857,053	2,161,408	2,300,038	2,564,000	4,157,500
05/01/21	1,694,889	1,818,149	2,124,170	2,261,043	2,523,450	4,157,500
11/01/21	1,694,889	1,818,149	2,124,170	2,261,043	2,523,450	4,157,500
05/01/22	1,651,356	1,777,299	2,084,885	2,219,904	2,480,670	4,091,752
11/01/22	1,651,356	1,777,299	2,084,885	2,219,904	2,480,670	4,091,752
05/01/23	1,605,863	1,734,406	2,043,439	2,176,502	2,435,538	4,022,389
11/01/23	1,605,863	1,734,406	2,043,439	2,176,502	2,435,538	4,022,389
05/01/24	1,558,323	1,689,370	1,999,713	2,130,713	2,387,922	3,949,210
11/01/24	1,558,323	1,689,370	1,999,713	2,130,713	2,387,922	3,949,210
05/01/25	1,508,645	1,642,081	1,953,582	2,082,405	2,337,688	3,872,007
11/01/25	1,508,645	1,642,081	1,953,582	2,082,405	2,337,688	3,872,007
05/01/26	1,456,730	1,592,428	1,904,914	2,031,441	2,284,692	3,790,557
11/01/26	1,456,730	1,592,428	1,904,914	2,031,441	2,284,692	3,790,557

**Table 5**

**San Francisco Public Utilities Commission  
Qualified Independent Consultant Report  
Projected Future Bond Issues - Hetchy Projects**

**Hetchy Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Anticipated Bond Series	2014A	2015A	2016A	2017A	2018A	2019A
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20
First Principal Payment Date	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Capitalized Interest Drawdown (Through 2026)</b>						
11/01/14						
05/01/15	1,791,700					
11/01/15	1,791,700					
05/01/16		1,864,850				
11/01/16		1,864,850				
05/01/17			2,120,400			
11/01/17			2,120,400			
05/01/18				2,220,150		
11/01/18				2,220,150		
05/01/19					2,435,800	
11/01/19					2,435,800	
05/01/20						3,949,625
11/01/20						3,949,625
05/01/21						
11/01/21						
05/01/22						
11/01/22						
05/01/23						
11/01/23						
05/01/24						
11/01/24						
05/01/25						
11/01/25						
05/01/26						
11/01/26						



**Table 5**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Projected Future Bond Issues - Hetchy Projects**  
**Hetchy Projects**

Projected Future Bond Issue #	1	2	3	4	5	6
Fiscal Year	2014/15	2015/16	2016/17	2017/18	2018/19	2019/20
Anticipated Bond Series	2014A	2015A	2016A	2017A	2018A	2019A
Anticipated Issuance Date	11/01/14	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19
Capitalized Interest Through	11/01/15	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20
First Principal Payment Date	11/01/16	11/01/17	11/01/18	11/01/19	11/01/20	11/01/21
Final Maturity	11/01/44	11/01/45	11/01/46	11/01/47	11/01/48	11/01/49
<b>Total Debt Service Net of Cap I (Through 2026)</b>						
11/01/14						
05/01/15	94,300					
11/01/15	94,300					
05/01/16	1,886,000	98,150				
11/01/16	3,438,599	98,150				
05/01/17	1,851,067	1,963,000	111,600			
11/01/17	3,473,533	3,307,290	111,600			
05/01/18	1,814,561	1,929,393	2,232,000	116,850		
11/01/18	3,510,038	3,340,897	3,515,497	116,850		
05/01/19	1,776,413	1,894,105	2,196,704	2,337,000	128,200	
11/01/19	3,548,186	3,376,185	3,480,201	3,681,066	128,200	
05/01/20	1,736,548	1,857,053	2,161,408	2,300,038	2,564,000	
11/01/20	3,588,051	3,413,237	3,515,497	3,718,028	4,038,535	
05/01/21	1,694,889	1,818,149	2,124,170	2,261,043	2,523,450	
11/01/21	3,629,710	3,452,141	3,552,734	3,757,022	4,079,084	
05/01/22	1,651,356	1,777,299	2,084,885	2,219,904	2,480,670	
11/01/22	3,673,243	3,492,991	3,592,020	3,798,162	4,121,864	
05/01/23	1,605,863	1,734,406	2,043,439	2,176,502	2,435,538	
11/01/23	3,718,736	3,535,883	3,633,466	3,841,564	4,166,997	
05/01/24	1,558,323	1,689,370	1,999,713	2,130,713	2,387,922	
11/01/24	3,766,276	3,580,920	3,677,192	3,887,353	4,214,612	
05/01/25	1,508,645	1,642,081	1,953,582	2,082,405	2,337,688	
11/01/25	3,815,955	3,628,209	3,723,322	3,935,661	4,264,846	
05/01/26	1,456,730	1,592,428	1,904,914	2,031,441	2,284,692	
11/01/26	3,867,869	3,677,862	3,771,990	3,986,625	4,317,843	
						207,875
						207,875
						4,157,500
						6,548,321
						4,091,752
						6,614,069
						4,022,389
						6,683,432
						3,949,210
						6,756,611
						3,872,007
						6,833,814
						3,790,557
						6,915,264

**Table 6**  
**San Francisco Public Utilities Commission**  
**Qualified Independent Consultant Report**  
**Debt Service Payments by Fiscal Year**

	FY 2015	FY 2016	FY 2017	FY 2018	FY 2019	FY 2020
<b>Outstanding Debt (Net of Capitalized Interest)<sup>1</sup></b>						
1991A Bonds CABs	0	0	0	0	5,000,000	2,100,000
2006A Bonds	31,912,863	31,915,613	31,914,738	31,913,863	31,911,488	31,915,863
2006B Bonds	7,673,188	7,667,438	11,639,438	11,643,813	8,975,013	10,472,200
2006C Bonds	4,236,006	4,231,131	4,225,956	4,224,422	2,172,469	3,311,375
2009A Bonds	26,884,638	26,927,388	26,922,888	26,966,338	27,053,838	27,152,938
2009B Bonds	26,657,400	26,621,650	26,617,150	26,621,900	26,619,775	26,619,775
2010A Bonds AMI	4,459,513	4,458,513	4,457,388	4,455,888	4,458,638	4,460,263
2010B Bonds BABs	23,856,630	23,856,630	34,269,130	34,113,078	33,949,991	33,766,026
2010C Bonds Refi	3,745,750	4,294,750	0	0	0	0
2010C Rsrv Fund <sup>2</sup>	0	(556,287)	0	0	0	0
2010D Bonds	4,869,250	13,995,250	18,485,125	18,484,375	18,485,625	18,482,000
2010E Bonds BABs	20,060,998	20,060,998	20,060,998	20,060,998	20,060,998	20,060,998
2010F Bonds	9,011,825	9,011,825	9,011,825	13,848,175	13,514,625	13,746,225
2010G Bonds BABs	24,427,165	24,427,165	24,427,165	24,427,165	24,427,165	24,427,165
2011A Bonds	28,597,311	29,583,425	29,583,425	29,583,425	29,583,425	29,583,425
2011B Bonds	1,375,800	1,375,800	1,375,800	2,019,338	2,016,063	2,015,250
2011C Bonds	2,200,300	2,200,500	2,200,100	2,197,325	2,197,038	2,193,975
2011D Bonds	6,621,700	6,644,425	2,283,050	2,283,050	2,283,050	2,283,050
2012A Bonds	13,707,550	27,415,100	27,415,100	27,415,100	27,415,100	27,415,100
2012B Bonds	683,450	683,450	683,450	683,450	683,450	683,450
2012C Bonds	4,403,500	4,403,500	4,403,500	4,403,500	4,403,500	4,403,500
2012D Bonds	780,225	780,225	780,225	780,225	12,435,663	12,435,550
<b>Subtotal</b>	<b>246,165,060</b>	<b>269,998,487</b>	<b>280,756,449</b>	<b>286,125,425</b>	<b>297,646,911</b>	<b>297,528,127</b>
<b>BABs Subsidies on Outstanding Debt (35% of Interest)</b>						
2010B BABs Subsidy	(8,349,821)	(8,349,821)	(8,275,446)	(8,122,827)	(7,957,247)	(7,773,859)
2010E BABs Subsidy	(7,021,349)	(7,021,349)	(7,021,349)	(7,021,349)	(7,021,349)	(7,021,349)
2010G BABs Subsidy	(8,549,508)	(8,549,508)	(8,549,508)	(8,549,508)	(8,549,508)	(8,549,508)
<b>Subtotal</b>	<b>(23,920,677)</b>	<b>(23,920,677)</b>	<b>(23,846,302)</b>	<b>(23,693,684)</b>	<b>(23,528,104)</b>	<b>(23,344,716)</b>
<b>Projected Future Debt (Net of Capitalized Interest)<sup>1,3</sup></b>						
2014 Bonds	294,000	5,535,000	5,535,000	11,317,000	11,315,000	11,313,000
2015 Bonds	0	366,000	5,609,000	5,609,000	14,471,000	14,468,000
2016 Bonds	0	0	395,000	6,091,000	6,021,000	14,608,000
2017 Bonds	0	0	0	368,000	6,286,000	6,286,000
2018 Bonds	0	0	0	0	343,000	6,776,000
2019 Bonds	0	0	0	0	0	500,000
<b>Subtotal</b>	<b>294,000</b>	<b>5,901,000</b>	<b>11,539,000</b>	<b>23,385,000</b>	<b>38,436,000</b>	<b>53,951,000</b>
<b>Total</b>	<b>246,459,060</b>	<b>275,899,487</b>	<b>292,295,449</b>	<b>309,510,425</b>	<b>336,082,911</b>	<b>351,479,127</b>
<b>Less BABs Subsidies</b>	<b>(23,920,677)</b>	<b>(23,920,677)</b>	<b>(23,846,302)</b>	<b>(23,693,684)</b>	<b>(23,528,104)</b>	<b>(23,344,716)</b>
<b>Total Net of BABs \$</b>	<b>222,538,383</b>	<b>251,978,810</b>	<b>268,449,147</b>	<b>285,816,741</b>	<b>312,554,807</b>	<b>328,134,410</b>

1 Annual Debt Service defined as principal and interest coming due in fiscal year, however SFPUC is required to make monthly payments of 1/12 principal and 1/6 semi-annual interest.

2 Assumes final debt service payment due 11/01/2016 is reduced to account for application of debt service reserve fund.

3 Includes debt service for bonds issued for both Water Projects and Hetchy Projects.

**Table 7**

**San Francisco Public Utilities Commission  
Qualified Independent Consultant Report  
Estimated Bond Reserve Fund Interest Earnings**

	2006A	2009A	2009B	2010A	2010B	2010C	2010D	2010E	2010F	2010G	2011ABCD	2012ABC	2012D	TOTAL
<b>Issuance Date</b>		08/19/09	09/15/09	06/17/10	06/17/10	06/17/10	08/04/10	08/04/10	12/22/10	12/22/10	08/04/11	06/07/12	08/08/12	
<b>Reserve Fund</b>	\$15,958,031	\$13,587,838	\$13,467,938	\$2,256,250	\$16,550,722	\$556,287	\$4,429,940	\$14,843,371	\$8,186,979	\$15,901,179	\$29,007,625	\$33,187,750	\$2,404,000	\$170,337,909
<b>Estimated Rate</b>		1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	
Through FY2016	1.50%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	2.00%	
FY2016 & After														
<b>Reserve Fund Interest Earnings<sup>1</sup></b>														
FY 2015	239,000	272,000	135,000	23,000	166,000	6,000	44,000	148,000	82,000	159,000	290,000	332,000	24,000	1,920,000
FY 2016	239,000	272,000	135,000	23,000	166,000	2,000	44,000	148,000	82,000	159,000	290,000	332,000	24,000	1,916,000
FY 2017	239,000	272,000	269,000	45,000	331,000	0	89,000	297,000	164,000	318,000	580,000	664,000	48,000	3,316,000
FY 2018	239,000	272,000	269,000	45,000	331,000	0	89,000	297,000	164,000	318,000	580,000	664,000	48,000	3,316,000
FY 2019	239,000	272,000	269,000	45,000	331,000	0	89,000	297,000	164,000	318,000	580,000	664,000	48,000	3,316,000
FY 2020	239,000	272,000	269,000	45,000	331,000	0	89,000	297,000	164,000	318,000	580,000	664,000	48,000	3,316,000

<sup>1</sup> Assumes interest earnings accrue to the fiscal year in which they were earned.

Note: The reserve requirements for the SFPUC's other outstanding water revenue bonds were fulfilled by reserve surety policies.



### **Certificate of the Consulting Engineers**

**In connection with Section 8B.124 of the Charter of the City and County of San Francisco, and Section 3.06(c)(1)(B) of the Indenture of the San Francisco Public Utilities Commission (SFPUC), and Board of Supervisors Ordinances [Ordinance Number To Come] authorizing the Sale of Water Revenue Bonds and/or Other Forms of Indebtedness, Including Commercial Paper**

#### **Introduction**

This Certificate has been prepared by AECOM USA, Inc. (the "Firm") at the request of the San Francisco Public Utilities Commission (SFPUC) in support of the SFPUC Water Revenue Bonds and/or Commercial Paper Issuance, as required under Section 8B.124 (a) (i) and (ii) of the San Francisco Charter and Section 3.06 (1)(i)(B) of that certain Amended and Restated Indenture of Trust, dated August 1, 2002, as amended and restated, by and between the SFPUC and U.S. Bank National Association, as trustee thereunder (the "Indenture"). The Firm is an independent engineering firm retained by the SFPUC to provide the certification. This Certificate is being delivered in anticipation of the issuance of Commercial Paper Notes (the "Notes") or Water Revenue Bonds (the "Bonds") by the SFPUC.

Proposition E requires certification by an independent consulting engineer that the Projects to be financed with proceeds of bonds under Proposition E, including the prioritization, scheduling and cost estimates thereof, meet utility standards.

Section 3.06(1)(i)(B) of the Indenture requires a Certificate of a Consulting Engineer (as defined under the Indenture) setting forth (i) the estimated completion date of the Projects or unfinished components thereof being financed with proceeds of the Notes or Bonds, and (ii) an estimate of the cost of the Project or uncompleted components thereof with proceeds of the Notes or Bonds.

#### **Background**

The SFPUC owns and operates a municipal water supply, storage and distribution system (the "Water Enterprise") that provides drinking water to retail customers in the City and certain retail customers outside of the City and to wholesale customers in three other San Francisco Bay Area counties (i.e. Alameda, San Mateo and Santa Clara). Approximately 2.5 million customers rely on the SFPUC to meet their daily water needs. The Water Enterprise consists of water treatment and distribution facilities located outside of the City and water treatment and distribution facilities located inside the City.

The responsibilities of the SFPUC's Water Enterprise are to manage, operate, and maintain San Francisco's water collection and distribution system.

#### **Certification**

The findings and conclusions in this Certificate are based on the Firm's review of the following references and data (herein referred to as the "Documents"):

- Water System Improvement Program, Quarterly Report, Regional Projects, Q3 FY 2013-2014
- Water System Improvement Program, Quarterly Report, Local Projects, Q3, 2013-2014

1. Based upon its review of the Documents and in reliance on the information presented in the Documents and in reliance upon conversations and representations of SFPUC staff, the undersigned certifies that the Projects, including prioritization, cost estimates, and scheduling, meet utility standards. For purposes of this certificate the terms "meets utility standards" means compliance with all appropriate federal, State of California and City requirements as noted in the Documents.

2. The Documents contain information about the current status of the Projects, including estimated completion dates. All Projects being funded by Notes or Bonds are scheduled for completion by May 24, 2019.

3. The cost estimates contained in the Documents, including budgeted costs of each Project, appear reasonable.

4. The Engineer has reviewed the methodology used by the Commission to develop the information presented in the Documents, and based upon such review, certifies that the methodology is reasonable, provided the methodology is consistently applied to all Projects.

While developing the Certificate, AECOM reviewed the references and data and consulted with SFPUC staff. This Certification of the CIP is based on the information provided by the SFPUC and interviews with officers of the SFPUC. The Engineer has made such examinations and inspections as it has deemed necessary to enable them to certify that the information presented in the Documents is reasonable. The conclusions, observations, and recommendations contained herein constitute only the opinions of the Firm. The various background documents, statements, and other information supplied by the SFPUC, its employees, and other consultants have been relied upon as being accurate in the performance of these analyses; however, no assurances are given nor warranties implied by the Firm as to the accuracy of such information. The Firm makes no certification and gives no assurances except as explicitly set forth in this document.

#### CERTIFICATION OF PROJECTS

The Firm's review of the references and data for the above included a "programmatic approach" such that the Firm certifies that the Water Revenue Bonds and/or Notes are intended to be used by the SFPUC to fund the Projects. The Projects may be moved on or off the CIP list, delayed or accelerated as necessary due to scheduling, budgeting, or other constraints.

Based upon our analysis and review of the data and analysis provided by the SFPUC, the Firm certifies that the projects to be financed by the Water Revenue Bonds and/or Notes, as the case may be, including the prioritization, cost estimates and scheduling, meet generally accepted utility standards.

Dated this 20 day of May, 2014

By: John Kinnean

John Kinnean, P.E., C.C.M.  
AECOM USA, Inc.



### **Certificate of the Consulting Engineers**

in connection with Section 8B.124 of the Charter of the City and County of San Francisco, and Section 3.06(c)(1) (B) of the Indenture of the San Francisco Public Utilities Commission (SFPUC), and Board of Supervisors Ordinances [Ordinance Number To Come] authorizing the Sale of Water Revenue Bonds and/or Other Forms of indebtedness, including Commercial Paper

#### **Introduction**

This Certificate has been prepared by AECOM USA, Inc. (the "Firm") at the request of the San Francisco Public Utilities Commission (SFPUC) in support of the SFPUC Water Revenue Bonds and/or Commercial Paper Issuance, as required under Section 8B.124 (a) (i) and (ii) of the San Francisco Charter and Section 3.06 (l)(i)(B) of that certain Amended and Restated Indenture of Trust, dated August 1, 2002, as amended and restated, by and between the SFPUC and U.S. Bank National Association, as trustee thereunder (the "Indenture"). The Firm is an independent engineering firm retained by the SFPUC to provide the certification. This Certificate is being delivered in anticipation of the issuance of Commercial Paper Notes (the "Notes") or Water Revenue Bonds (the "Bonds") by the SFPUC.

Proposition E requires certification by an independent consulting engineer that the Projects to be financed with proceeds of bonds under Proposition E, including the prioritization, scheduling and cost estimates thereof, meet utility standards.

Section 3.06(l)(i)(B) of the Indenture requires a Certificate of a Consulting Engineer (as defined under the Indenture) setting forth (i) the estimated completion date of the Projects or unfinished components thereof being financed with proceeds of the Notes or Bonds, and (ii) an estimate of the cost of the Project or uncompleted components thereof with proceeds of the Notes or Bonds.

#### **Background**

The SFPUC owns and operates a municipal water supply, storage and distribution system (the "Water Enterprise") that provides drinking water to retail customers in the City and certain retail customers outside of the City and to wholesale customers in three other San Francisco Bay Area counties (i.e. Alameda, San Mateo and Santa Clara). Approximately 2.5 million customers rely on the SFPUC to meet their daily water needs. The Water Enterprise consists of water treatment and distribution facilities located outside of the City and water treatment and distribution facilities located inside the City.

The responsibilities of the SFPUC's Water Enterprise are to manage, operate, and maintain San Francisco's water collection and distribution system.

#### **Certification**

The findings and conclusions in this Certificate are based on the Firm's review of the following references and data (herein referred to as the "Documents"):

- Lower Cherry Aqueduct Emergency Rehabilitation Environmental Assessment Report, LCAER EA Chapter 2 for Rev 4, 9/23/14

- LCAER Baseline Schedule from Flatiron, Submittal 001-Rev 2, 8/15/2014
- P12 Cost Estimate for HH-974E: Lower Cherry Aqueduct Emergency Rehabilitation (LCAER), as of May 15, 2014
- Hetch Hetchy Capital Improvement Programs Quarterly Report, 9/2/14

1. Based upon its review of the Documents and in reliance on the information presented in the Documents and in reliance upon conversations and representations of SFPUC staff, the undersigned certifies that the Lower Cherry Aqueduct Emergency Rehabilitation Project ("Project"), including prioritization, cost estimate, and schedule, meet utility standards. For purposes of this certificate the terms "meets utility standards" means compliance with all appropriate federal, State of California and City requirements as noted in the Documents.
2. The Documents contain information about the current status of the Project, including the estimated completion date. The project is scheduled for completion in November of 2015.
3. The cost estimates contained in the Documents, including budgeted cost of the Project, appear reasonable.
4. The Engineer has reviewed the methodology used by the Commission to develop the information presented in the Documents, and based upon such review, certifies that the methodology is reasonable, provided the methodology is consistently applied to all Projects.

While developing the Certificate, AECOM reviewed the references and data and consulted with SFPUC staff. This Certification of the Project is based on the information provided by the SFPUC and interviews with officers of the SFPUC. The Engineer has made such examinations and inspections as it has deemed necessary to enable them to certify that the information presented in the Documents is reasonable. The conclusions, observations, and recommendations contained herein constitute only the opinions of the Firm. The various background documents, statements, and other information supplied by the SFPUC, its employees, and other consultants have been relied upon as being accurate in the performance of these analyses; however, no assurances are given nor warranties implied by the Firm as to the accuracy of such information. The Firm makes no certification and gives no assurances except as explicitly set forth in this document.



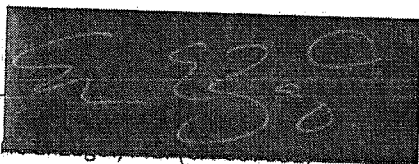
**CERTIFICATION OF PROJECT**

The Firm's review of the references and data for the above certifies that the Water Revenue Bonds and/or Notes are intended to be used by the SFPUC to fund the Project. The Project may be moved on or off the CIP list, delayed or accelerated as necessary due to scheduling, budgeting, or other constraints.

Based upon our analysis and review of the data and analysis provided by the SFPUC, the Firm certifies that the Project to be financed by the Water Revenue Bonds and/or Notes, as the case may be, including the prioritization, cost estimates and scheduling, meets generally accepted utility standards.

Dated this 13th day of October, 2014

By: \_\_\_\_\_

A rectangular area containing a redacted signature, likely of a representative from the firm.

E



**Certificate of the Consulting Engineers**  
**in connection with Section 8B.124 of the Charter of the City and County of San Francisco, and**  
**Section 3.06(c)(1) (B) of the Indenture of the San Francisco Public Utilities Commission (SFPUC),**  
**and Board of Supervisors Ordinances [Ordinance Number To Come] authorizing the Sale of Water**  
**Revenue Bonds and/or Other Forms of indebtedness, including Commercial Paper**

## **Introduction**

This Certificate has been prepared by AECOM USA, Inc. (the "Firm") at the request of the San Francisco Public Utilities Commission (SFPUC) in support of the SFPUC Water Revenue Bonds and/or Commercial Paper Issuance, as required under Section 8B.124 (a) (i) and (ii) of the San Francisco Charter and Section 3.06 (l)(i)(B) of that certain Amended and Restated Indenture of Trust, dated August 1, 2002, as amended and restated, by and between the SFPUC and U.S. Bank National Association, as trustee thereunder (the "Indenture"). The Firm is an independent engineering firm retained by the SFPUC to provide the certification. This Certificate is being delivered in anticipation of the issuance of Commercial Paper Notes (the "Notes") or Water Revenue Bonds (the "Bonds") by the SFPUC.

Proposition E requires certification by an independent consulting engineer that the Projects to be financed with proceeds of bonds under Proposition E, including the prioritization, scheduling and cost estimates thereof, meet utility standards.

Section 3.06(l)(i)(B) of the indenture requires a Certificate of a Consulting Engineer (as defined under the Indenture) setting forth (i) the estimated completion date of the Projects or unfinished components thereof being financed with proceeds of the Notes or Bonds, and (ii) an estimate of the cost of the Project or uncompleted components thereof with proceeds of the Notes or Bonds.

## **Background**

The SFPUC owns and operates a municipal water supply, storage and distribution system (the "Water Enterprise") that provides drinking water to retail customers in the City and certain retail customers outside of the City and to wholesale customers in three other San Francisco Bay Area counties (i.e. Alameda, San Mateo and Santa Clara). Approximately 2.5 million customers rely on the SFPUC to meet their daily water needs. The Water Enterprise consists of water treatment and distribution facilities located outside of the City and water treatment and distribution facilities located inside the City.

The responsibilities of the SFPUC's Water Enterprise are to manage, operate, and maintain San Francisco's water collection and distribution system.

## **Certification**

The findings and conclusions in this Certificate are based on the Firm's review of the following references and data (herein referred to as the "Documents"):

- *QUARTERLY REPORT Hetch Hetchy Capital Improvement Programs April 2014 – June 2014, 9/2/14*

- *Hetchy Water Ten Year Project and Programmatic Plans, 1/7/14*

1. Based upon its review of the Documents and in reliance on the information presented in the Documents and in reliance upon conversations and representations of SFPUC staff, the undersigned certifies that the Hetchy System Improvement Program Projects ("Projects") described in Exhibit A attached, including prioritization, cost estimate, and schedule, meet utility standards. For purposes of this certificate the terms "meets utility standards" means compliance with all appropriate federal, State of California and City requirements as noted in the Documents.
2. The Documents contain information about the current status of the Projects, including the estimated completion date. All Projects being funded by Notes or Bonds are scheduled for completion in June of 2023.
3. The cost estimates contained in the Documents, including budgeted cost of each Project, appear reasonable.
4. The Engineer has reviewed the methodology used by the Commission to develop the information presented in the Documents, and based upon such review, certifies that the methodology is reasonable, provided the methodology is consistently applied to all Projects.

While developing the Certificate, AECOM reviewed the references and data and consulted with SFPUC staff. This Certification of the CIP is based on the information provided by the SFPUC and interviews with officers of the SFPUC. The Engineer has made such examinations and inspections as it has deemed necessary to enable them to certify that the information presented in the Documents is reasonable. The conclusions, observations, and recommendations contained herein constitute only the opinions of the Firm. The various background documents, statements, and other information supplied by the SFPUC, its employees, and other consultants have been relied upon as being accurate in the performance of these analyses; however, no assurances are given nor warranties implied by the Firm as to the accuracy of such information. The Firm makes no certification and gives no assurances except as explicitly set forth in this document.

**CERTIFICATION OF PROJECT**

The Firm's review of the references and data for the above included a "programmatic approach" such that the Firm certifies that the Water Revenue Bonds and/or Notes are intended to be used by the SFPUC to fund the Projects. The Projects may be moved on or off the CIP list, delayed or accelerated as necessary due to scheduling, budgeting, or other constraints.

Based upon our analysis and review of the data and analysis provided by the SFPUC, the Firm certifies that the projects to be financed by the Water Revenue Bonds and/or Notes, as the case may be, including the prioritization, cost estimates and scheduling, meet generally accepted utility standards.

Dated this 18th day of November, 2014

By: \_\_\_\_\_



Eric L. Eggen, PE (CA 007681)

EXHIBIT A  
 HETCHY SYSTEM IMPROVEMENT PROGRAM  
 FY 2014-2015 (FY15) AND FY 2015-2016 (FY16) CAPITAL IMPROVEMENT PROJECTS

Program/Project Type	Project Number	Project Title
HSIP - Water Infrastructure	CUH10001	San Joaquin Pipeline Rehabilitation
HSIP - Water Infrastructure	CUH100N01	Priest Reservoir Lining, Water Quality
HSIP - Water Infrastructure	CUH1020N07	Early Intake Dam Rehabilitation
HSIP - Joint Projects	CUH10002	Mountain Tunnel Rehabilitation/Bypass
HSIP - Joint Projects	CUH10206	O'Shaughnessy Outlet Works
HSIP - Joint Projects	CUH10204	Kirkwood Penstock
HSIP - Joint Projects	CUH102	Cherry Reservoir Valves
HSIP - Joint Projects	CUH10203	Dam Condition Assessment & Repair
HSIP - Joint Projects	CUH1020N06	Cherry Spillway
HSIP - Joint Projects	CUH1020N04	Moccasin Wastewater Treatment Plant
HSIP - Joint Projects	CUH10201	Microwave System
HSIP - Joint Projects	CUH10214	Hetch Hetchy Facilities - Upgrades
HSIP - Joint Projects	CUH10202	Hatch Hetchy Facilities New Construction - Moccasin
HSIP - Joint Projects	CUH10209	Road Improvements
HSIP - Joint Projects	CUH10210	Hetchy Fiber Projects
HSIP - Joint Projects	CUH10208	Remote Terminal Unit Replacement
HSIP - Joint Projects	CUH10211	Facilities Security
HSIP - Joint Projects	CUH1020N05	Communication Systems Upgrades