

Public Utilities Commission of the
City and County of San Francisco

Water Enterprise

Green Bonds Annual Report

For Fiscal Year Ending
June 30, 2017



Services of the San Francisco Public Utilities Commission

Photo: WSIP Habitat Reserve Program, Alameda, Ca.

Introduction

This annual green bonds spending report provides project spending details on the projects funded by the following bond issuance of the Water Enterprise of the Public Utilities Commission of the City and County of San Francisco (SFPUC):

- **Water Revenue Bonds Series 2016 C (Green Bonds)**

The SFPUC is a department of the City and County of San Francisco and provides drinking water to the City of San Francisco and wholesale water agencies located in three Bay Area counties, wastewater services to the City of San Francisco, and green hydroelectric and solar power to retail customers and the City's municipal departments. The SFPUC's Water Enterprise operates and maintains the municipal drinking water supply, storage and distribution system for retail customers in the City of San Francisco, to certain retail customers outside of the City, and to wholesale customers in three San Francisco Bay Area counties. The Water Enterprise consists of water treatment and distribution facilities located outside of the City (the Regional Water System) and water treatment and distribution facilities located inside the City (the Local Water System).

Green Bonds Certified Infrastructure Projects

SFPUC has identified the projects included in the Water System Improvement Program (WSIP) to be Green Projects. The proceeds of the 2016 Series C Bonds will be applied to finance and refinance WSIP projects.

The Water System Improvement Program (WSIP) is a \$4.845 billion program consisting of 87 capital projects to repair, replace, and upgrade critical portions of the Regional Water System and the Local Water System to meet specific level of service goals and objectives for seismic reliability, delivery reliability, water quality and water supply in an environmentally sustainable manner.

As of June 30, 2017, the WSIP is approximately 95% complete with construction finished on 34 local projects and 39 regional projects along the Hetch Hetchy Regional Water System to ensure reliable water delivery to its 2.7 million customers.

Local Program

The WSIP Local Program includes 35 projects (excluding 5 Water Supply Projects) that are located within the city limits of San Francisco and only benefit city residents. (As of July 1, 2011, management and implementation of the Water Supply Projects were transferred from the WSIP Local Program to the Water Enterprise Capital Improvement Program.) These projects, which are typically smaller in size than the larger Regional Projects, include improvements to existing in-City distribution pipelines, storage reservoirs/tanks, pump stations, and miscellaneous facilities.

Regional Program

The Regional Program includes 52 projects that benefit both San Francisco residents and the 27 Wholesale Customers. These projects, which are typically much larger and located mostly outside San Francisco limits, are referred to as “Regional Projects.” They include a wide variety of improvements such as upgrades to and the addition of new treatment, transmission (pipelines, tunnels, pump stations), and storage (dams and reservoirs) facilities spread over seven different counties (Tuolumne, Stanislaus, San Joaquin, Alameda, Santa Clara, San Mateo, and San Francisco). The cost of the Regional Projects is incorporated in the rates paid by both Retail Customers and Wholesale Customers. The Regional Program is further divided into the following categories of projects:

San Joaquin Regional Projects. These projects are designed to improve water delivery reliability by augmenting three existing transmission pipelines that transmit the Hetch Hetchy water supply across the San Joaquin Valley, and enhance water quality by building the Tesla Disinfection Facility, a new advanced disinfection/treatment facility for the SFPUC’s largest source of supply.

Sunol Valley Regional Projects. The projects within this region are designed to address delivery and seismic vulnerabilities associated with the delivery of Hetch Hetchy water through the Sunol Valley and water originating from the Alameda Watershed. Projects include the construction of a new Calaveras Dam, a fourth Alameda Siphon, a new Irvington Tunnel, in addition to the existing tunnel, and other connecting large-diameter pipelines, as well as upgrades to the existing Sunol Valley Water Treatment Plant and San Antonio Pump Station. All of these facilities are within or in close proximity to the Calaveras Fault influence zone.

Bay Division Regional Projects. The projects within this region address the seismic vulnerability of the four Bay Division Pipelines, which transmit the blend of Hetch Hetchy and Sunol Valley water across the San Francisco Bay to the Peninsula and serve a large number of Wholesale Customers. The projects in this region address the crossing of the Hayward Fault and system vulnerability associated with the close proximity of the San Andreas Fault; and add system redundancy and operational flexibility.

Peninsula Regional Projects. The projects within this region are generally designed to address facility seismic vulnerabilities, and meet water quality and delivery goals for the Crystal Springs, San Andreas and Pilarcitos Reservoirs. Projects include the construction of a new Crystal Springs Bypass Tunnel and large-diameter pipelines, as well as upgrades to the existing Harry Tracy Water Treatment Plant, the Pulgas

Balancing Reservoir, and the Lower Crystal Springs Dam. All these facilities are located within the San Andreas Fault influence zone.

San Francisco Regional Projects. The projects within this region include the seismic retrofit of the Sunset and University Mound Terminal Reservoirs, and a groundwater storage and recovery project. The two reservoir projects are located within the City but can be used to supply water back to the Northern Peninsula, which can benefit the Wholesale Customers. The groundwater project includes improvements in both San Mateo and San Francisco counties.

Support Projects (formally System Wide Region). In July 2011, the System Wide Region was re-named as Support Projects. These projects include (1) system security upgrades, which involves the development and integration of security components at critical water system facilities, (2) the PEIR, which was prepared in compliance with CEQA to identify and analyze potential programmatic environmental impacts of the proposed system improvements, (3) the Watershed Environmental Improvement Program, which consists of conservation easements and/or fee title purchase of property from willing landowners to permanently protect Alameda Creek Watershed lands, (4) the Bioregional Habitat Restoration project (formerly Habitat Reserve Program), which is intended to provide a coordinated and consolidated approach to compensate for habitat impacts that would result from the implementation of the WSIP projects in the San Joaquin, Sunol Valley, Bay Division and Peninsula Regions of the Regional Water System, (5) Vegetation Restoration of WSIP Construction Sites, which was added to the Program in March 2014 to provide maintenance, monitoring and reporting of onsite habitat restoration installed at the various WSIP construction sites, and (6) Regional Program management.

Green Bond Spending Details

The SFPUC retained an independent third-party consultant, Sustainalytics, to review and verify that the Water Series 2016C bonds meet the requirements of the Climate Bonds Initiative (CBI) Water Bonds Standard. The proceeds from the green bond issuance are separately tracked and allocated to designated eligible projects. Bond fund spending by eligible project is detailed below in Table 1.

**Table 1: Green Bond Proceeds Spending Detail
As of June 30, 2017**

Water Series 2016C

Bond Closing Date: December 14, 2016

Project*	Budget	Expended in FY16-17	Remaining Budget
Groundwater Storage and Recovery	\$8,364,951	\$0	\$8,364,951
Upper Alameda Creek Filter Gallery	6,302,420	-	6,302,420
Seismic Upgrade of BDPL at Hayward Fault	3,181,724	-	3,181,724
New Crystal Springs Bypass Tunnel	170	170	-
Adit Leak Repairs	19,471,358	19,471,358	-
New Irvington Tunnel	3,534,658	-	3,534,658
Alameda Siphon #4	74,987	-	74,987
Security System Upgrades	1,225,367	-	1,225,367
HTWTP Long Term Improvements	35,659,426	33,445,456	2,213,970
BDPL Reliability Upgrade-Trans Bay Tunnel	83,385,032	81,563,568	1,821,464
BDPL Reliability Upgrade-Pipeline	42,522,804	41,944,520	578,284
Calaveras Dam Replacement	32,848,192	-	32,848,192
San Antonio Backup Pipeline	41,041	-	41,041
Program Environmental Impact Report	66,883	-	66,883
Mitigation Planning	1,155,323	-	1,155,323
Vegetation Restoration WSIP Sites	32,940	-	32,940
Habitat Reserve Program	12,140,308	12,000,000	140,308
EBMUD Intertie	173	173	-
Program Management Services	1,581,090	-	1,581,090
Watershed Environmental Improvement Program	5,232,789	-	5,232,789
Total	\$256,821,634	\$188,424,245	\$68,396,389

**Eligible projects include all WSIP Projects,
subset only listed*

Attachment:

1. Sustainalytics Report, September 2016

WATER CRITERIA OF THE CLIMATE BONDS STANDARD VERIFICATION LETTER

Issuing Entity: The San Francisco Public Utilities Commission

Kind of engagement: Assurance Engagement

Period engagement was carried out: September 1st 2016 to September 29th 2016

Approved verifier: Sustainalytics US Inc.,

Contact for engagement: 24 School Street, Suite 803, Boston, MA, 02108, U.S.A.

Engagement team leader: Vikram Puppala, vikram.puppala@sustainalytics.com +1 647 317 3694

Professional team member: Ankita Shukla, ankita.shukla@sustainalytics.com +1 416 861 0403

Scope:

The San Francisco Public Utilities Commission (“SFPUC”), has engaged Sustainalytics to review and verify that SFPUC’s green bond meets the requirements for the Water Criteria of the Climate Bonds Standard. The proceeds of the bond will finance the projects under the Water System Improvement Program (“WSIP”). The WSIP program includes a total of 87 projects of which the following large projects were prioritized for assessment as they comprise a significant portion of the WSIP program budget.

- 35201: Alameda Creek Recapture Project
- 37401: Calaveras Dam Replacement
- 37402: Calaveras Reservoir Upgrades
- 35401: Lower Crystal Springs Dam Improvement
- PWI - WSIP Closeout – Peninsula Region (new project 2016)
- 38801: Programmatic Environmental Impact Report (EIR)

The rest of the projects were concluded to have insignificant sensitivity to current and future climate impacts over their operational lifetimes.

Criteria

A. Water Criteria of the Climate Bond Standard

B. Adaptation Theme

1. Allocation - *all criteria*
2. Governance - *all criteria*
3. Diagnostic Assessment - *all criteria*
4. Adaptation Plan - *all criteria*

Please find details of Alliance for Global Water Adaptation’s (AGWA) Assessment in Schedule 2.

Issuing Entity's Responsibility

SFPUC is responsible to provide information and documents relating to:

- The details concerning water allocation and availability
- The governance process for water entitlements and allocation, management systems, and conflict resolution mechanisms
- The details concerning the diagnostic assessment conducted
- The details concerning the adaptation plan produced

Independence and Quality Control

Sustainalytics, a leading provider of ESG and corporate governance research and ratings to investors, conducted the verification of SFPUC's green bond, issued to finance eligible projects included in its Water System Improvement Program ("WSIP"), and provided an independent opinion informing the conformance of the green bond with the Water Criteria of the Climate Bonds Standard. Sustainalytics relied on the assessment conducted by Alliance for Global Water Adaptation to provide this opinion. Sustainalytics makes all efforts to ensure the highest quality and rigor during its assessment process and enlisted its Sustainability Bonds Review Committee to provide oversight over the assessment of the bond.

Verifier's Responsibility

The work undertaken as part of this engagement included conversations with relevant SFPUC management and staff and the review of relevant public and internal documents to assess the following:

- Conformance of SFPUC's green bond with the Water Criteria of the Climate Bonds Standard;
- Conformance with the criteria under the Adaptation Theme: Allocation, Governance, Diagnostic Assessment, and Adaptation Plan;
- Conformance with the Internal Processes & Controls requirements;
- Conformance with Reporting Prior to Issuance requirements.

Basis of the Opinion

Sustainalytics conducted the verification in accordance with the Climate Bond Standard Version 2.0 and with International Standard on Assurance Engagements 3000 – Assurance Engagements other than Audits or Reviews of Historical Information.

Sustainalytics has relied on the assessment, information and the facts presented by Alliance for Global Water Adaptation with regards to the bond's compliance with Climate Bond Standards. Please find details of Alliance for Global Water Adaptation's (AGWA) Assessment in Schedule 2.

Sustainalytics is not responsible for any aspect of the projects referred to in this opinion and cannot be held liable if estimates, findings, opinions, or conclusions are incorrect. Thus, Sustainalytics shall not be held liable if any of the information or data provided by SFPUC and/or AGWA that is not correct or complete.

Restriction on Distribution and Use of Report

This report along with the information provided is for the use and publication of SFPUC and Climate Bond Standard Board only and not for the use of any other external parties.

Opinion

Based on the assessment of SFPUC's green bond under the Water Criteria of the Climate Bonds Standard, nothing has come to Sustainalytics' attention that causes us to believe that, in all material respects, SFPUC's green bond, issued to finance eligible projects included in the Water System Improvement Program, is not in conformance with the Water Criteria of the Climate Bonds Standard Pre-Issuance Requirements. Sustainalytics believes that the Nominated Projects and Assets will address vulnerabilities of the SFPUC's water supply to climate change and other factors and will contribute to ensure the long-term reliability of the regional water system.



Vikram Puppala
September 29th, 2016
215 Spadina Ave, Suite 300,
Toronto ON M5T 2C7, Canada

Schedule 1A: Water Criteria of the Climate Bonds Standard

<p>Selection of Nominated Projects:</p>	<p>1.1 Statement on the environmental objectives of the bond</p> <p>1.2 Nominated Projects meet the Climate Bonds criteria</p> <p>1.3 Document a list of Nominated Projects and Assets</p> <p>1.4 Confirmation that Nominated Projects and Assets will not be nominated to other Climate Bonds</p> <p>1.5 Confirmation that Net Proceeds of the Green Private Placement shall not be greater than the value of the Nominated Projects and Assets</p>
<p>Internal Processes and Controls</p>	<p>2.1.1 Tracking of proceeds</p> <p>2.1.2 Managing of unallocated proceeds</p> <p>2.1.3 Earmarking funds to Nominated Projects and Assets</p>
<p>Reporting Prior to Issuance</p>	<p>3.1.1 Investment area of Nominated Projects and Assets</p> <p>3.1.2 Intended types of temporary investments of unallocated proceeds</p> <p>3.1.3 Approach of Verifier</p> <p>3.1.4 Whether periodic assurance engagement will be undertaken</p>

Schedule 1B: Conformance to the Water Criteria of the Climate Bonds Standard

Procedure Performed	Factual Findings	Error or Exceptions Identified
<p>Verification of requirements specified under Selection of Nominated Projects</p>	<p>1.1 The objective of the bond is to primarily use proceeds to finance the projects under the Water System Improvement Program (“WSIP”)</p> <p>1.2 The projects meet the minimum scoring requirements outlined in the Phase 1: Engineered Water Infrastructure under the Water Criteria of the Climate Bonds Standard (Schedule 2).</p> <ul style="list-style-type: none"> • Allocation: 17 of 17 (100 percent) • Governance: 12 of 15 (80 percent) • Diagnostic assessment: 23 of 24 (96 percent) • Adaptation plan: High pass <p>1.3 The Nominated Projects include all projects (87) under the WSIP program from the following were prioritized for assessment.</p> <ul style="list-style-type: none"> • 35201: Alameda Creek Recapture Project • 37401: Calaveras Dam Replacement • 37402: Calaveras Reservoir Upgrades • 35401: Lower Crystal Springs Dam Improvement • PWI - WSIP Closeout – Peninsula Region (new project 2016) • 38801: Programmatic Environmental Impact Report (EIR) <p>1.4 SFPUC’s management confirms that the projects shall not be nominated to other Climate Bonds.</p> <p>1.5 SFPUC’s management confirms that the net proceeds of the bond shall not be greater than the value of the projects.</p>	<p>None</p>
<p>Verification of requirements specified under Internal Processes and Controls</p>	<p>2.1.1 SFPUC’s management confirms that proceeds will be segregated and tracked in a systematic manner and will be exclusively used to finance Eligible Projects.</p>	<p>None</p>

	<p>2.1.2 SFPUC’s management confirms that all net proceeds will be immediately used (i.e. allocated at issuance) to finance the Eligible Projects. There will not be any unallocated Net Proceeds.</p> <p>2.1.3 SFPUC’s management has confirmed that the proceeds from the bond will be immediately used for the repayment of debt originally raised for the Nominated Projects.</p>	
<p>Verification of requirements specified under Reporting Prior to Issuance</p>	<p>3.1.1 The bond’s offer letter confirms that the proceeds of the transaction will primarily be used to finance the projects under WSIP. These fall under the Water Criteria of the Climate Bonds Taxonomy.</p> <p>3.1.2 The bond’s offer letter confirms that all net proceeds will be immediately used (i.e. allocated at issuance) to finance the WSIP projects.</p> <p>3.1.3 The bond’s offer letter confirms that an approved third party verifier has been appointed to confirm the bond’s conformance with pre-issuance requirements of the Water Criteria of the Climate Bonds Standard.</p> <p>3.1.4 The bond’s offer letter confirms that an approved third party verifier will conduct post-issuance assurance exercise within a year’s time to reaffirm conformance of the bond with the Water Criteria of the Climate Bonds Standard.</p>	<p>None</p>

Schedule 2: Assessment of SFPUC Bond under the Water Criteria of the Climate Bond Standard

Please find details of Alliance for Global Water Adaptation's (AGWA) Assessment in attached file.

Adaptation Assessment

Projects prioritized in this assessment:

- 35201: Alameda Creek Recapture Project
- 37401: Calaveras Dam Replacement
- 37402: Calaveras Reservoir Upgrades
- 35401: Lower Crystal Springs Dam Improvement
- PWI - WSIP Closeout – Peninsula Region (new project 2016)
- 38801: Programmatic Environmental Impact Report (EIR)

The following items related to nominated assets and projects criteria that are currently under development. They are therefore deemed unallocated proceeds at this stage and will be assessed in detail in subsequent reporting:

- 38802: Bioregional Habitat Restoration project
- 38803: Vegetation Restoration of WSIP Construction Sites
- 39401: Watershed Environmental Improvement Program (WEIP)

These projects are defined in precis at two sites:

<http://sfwater.org/index.aspx?page=978>

<https://sfwater.org/modules/showdocument.aspx?documentid=8444>

A spreadsheet has been attached with an additional list of items that, after assessment, we conclude have insignificant sensitivity to current or future climate impacts over their operational lifetimes. This spreadsheet details the reasons for their limited sensitivity.

Please note that many of these components of the issuance are seismic upgrades, and this certification makes no assessment as to utility of these upgrades for reducing or eliminating seismic risk. The Climate Bond Standard, including the Water Criteria, targets issues around climate change impacts and mitigation, and all components of the issuance have been subject to this frame of reference.

The regional watersheds relevant to this scoring:

- Peninsula
- Upper Tuolumne
- Alameda

Sectional scoring:

1. Allocation: 17 of 17 (100 percent)
2. Governance: 12 of 15 (80 percent)
3. Diagnostic assessment: 23 of 24 (96 percent)
4. Adaptation plan: 5 of 5 (100 percent)

Disclaimer

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This verification letter is for information purposes only and Sustainalytics will not accept any form of liability for the substance of the opinion and/or any liability for damage arising from the use of this verification letter and/or the information provided in it.

As the verification letter is based on information made available by the client, Sustainalytics does not warrant that the information presented in this verification letter is complete, accurate or up to date.

Nothing contained in this verification letter shall be construed as to make a representation or warranty, express or implied, regarding the advisability to invest in or include companies in investable universes and/or portfolios. Furthermore, this verification letter shall in no event be interpreted and construed as an assessment of the economic performance and credit worthiness of the bond. The issuance and the outcome of the green bond is outside the scope of this engagement.

The client is fully responsible for ensuring its commitments` compliance, implementation and monitoring.

SUSTAINALYTICS

Sustainalytics is the largest independent provider of sustainability research, analysis, and services to investors. We serve over 250 institutional investors which include some of the world's largest asset owners and asset managers. Through over 20 years of experience serving the responsible investment (RI) market, we have gained a reputation for providing high-quality ESG research solutions and excellent client service.

Sustainalytics is headed by seasoned professionals in the field of business, finance, and sustainability, with a wealth of experience in the Responsible Investment area. After more than 20 years of local experience and expertise in the Responsible Investment (RI) market Sustainalytics has developed a comprehensive understanding of trends and best practices and a solid process to assist organisations in integrating ESG considerations into their policies and strategies. We have worked with some of the world's financial institutions including pension plans, investment managers and banks providing customised support to help them achieve their RI objectives. Clients include ABN AMRO, APG, BBVA, BNP Paribas, Deutsche Bank, ING Bank, Lombard Odier, Lloyds Bank, Triodos Bank, UBS and over 250 other financial institutions and organisations.

Sustainalytics now has a staff of 250 employees globally, including over 120 analysts, with operations in Amsterdam, Boston, Bucharest, Frankfurt, New York, Paris, London, Singapore, Sydney, Timisoara, and Toronto, and representation in Brussels and Washington DC.



In 2015, Sustainalytics was named the Best SRI or Green Bond Research Firm by GlobalCapital. In December 2014, for the third year in a row, Sustainalytics was named best sustainable and responsible investment research firm in the Independent Research in Responsible Investment (IRRI) Survey, conducted by Thomson Reuters and SRI-CONNECT.



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Michael Jantzi, CEO

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