

GREEN BOND REPORT

San Francisco Public Utilities Commission

WATER ENTERPRISE | FY 2018-19



San Francisco
Water
Power
Sewer

Services of the San Francisco Public Utilities Commission

**WATER
ENTERPRISE**

Image: San Andreas Reservoir

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INTRODUCTION

The San Francisco Public Utilities Commission (SFPUC) is a department of the City and County of San Francisco. In 2008, San Francisco set an ambitious goal to reduce greenhouse gas emissions by 25% below 1990 levels by 2017, by 40% below 1990 levels by 2025, and become carbon neutral by 2050.

These goals impact all San Francisco departments, including the SFPUC, and influence operating and capital investment activities. The SFPUC operates within the City of San Francisco as well as the State of California and is governed by several ambitious laws and regulations at the State and City level, as well as policies and programs within the SFPUC, created to achieve additional climate and social inclusion goals.

The SFPUC views green bonds as an important tool to help meet these goals and finance low-carbon, climate-resilient infrastructure. Since issuing its first green bond in 2015, the SFPUC has sold more than \$1.4 billion in certified green bonds for all three of its enterprise utilities: Water, Wastewater, and Power. Impacts from the bonds to date include increased water storage, upgrades to renewable energy generation facilities and the use of green infrastructure to divert stormwater from treatment plants.

In addition to providing project impact information, this report seeks to highlight associated co-benefits as well as describe the context in which climate and social inclusion informs the SFPUC's capital planning decisions. This report reflects activities through June 30, 2019.



Lower Crystal Springs Reservoir



Alameda watershed

1. State and City Regulatory Context

State of California

The State of California has enacted legislation, regulations and executive orders that put the State on course to achieve significant greenhouse gas reductions while also addressing the impacts of climate change. Described below are selected state-level mandates related to the environment and climate that impact the SFPUC's capital planning.¹

- California Environmental Quality Act (CEQA): Established in 1970, CEQA requires that all projects proposed by state and local agencies undergo an environmental impact review and to avoid or mitigate identified environmental impacts.
- Assembly Bill 32, the Global Warming Solutions Act of 2006: State Law created to reduce the State's greenhouse gas emissions to 1990 levels by 2020 and to 80% below 1990 levels by 2050.
- Assembly Bill 2800: Requires the California Natural Resources Agency to create a Climate-Safe Infrastructure Working Group, and for State agencies to consider the current and future impacts of climate change when planning, designing, building, operating, maintaining, and investing in State infrastructure.

In August of 2018, California State Treasurer John Chiang signed the [Green Bond Pledge](#), making California the first state to pledge to use 'green' financing to combat climate change.

City and County of San Francisco

San Francisco has long been a leader in the fight against climate change. As of 2017, the City has successfully reduced emissions by 36% compared to 1990 levels, surpassing its 25% target. As part of the Global Climate Action Summit in 2018, Mayor London Breed announced the following climate goals:

- Zero Waste: Reduce waste generation by 15% and landfill disposal by 50% by 2030.
- Decarbonizing Buildings: Net-zero carbon buildings in San Francisco by 2050.
- 100% Renewable Energy: Switch all electricity in San Francisco to renewables by 2030.
- Green Bonds: Issue more green bonds to finance infrastructure and capital projects.

San Francisco's leadership further strengthened the City's commitment to climate action in 2019 when the Board of Supervisors unanimously approved the Climate Emergency Resolution 160-

¹ For a comprehensive list of California Climate Change Legislation, Regulations and Executive Orders, see <https://www.climatechange.ca.gov/state/mandates.html>

19, aligning the San Francisco's climate goals with the Paris Agreement by limiting global warming to 1.5 °C above pre-industrial levels.

In addition to the activities described above, the Mayor and Board of Supervisors have led the initiatives described below that require SFPUC capital planning to include climate and social inclusion:

- [Local Hire Ordinance](#) was adopted in December of 2010 by the San Francisco Board of Supervisors. The ordinance requires that local residents perform a minimum 30% of trade hours and 50% for apprenticeship hours and is one of the strongest pieces of legislation in the country to promote the employment of local residents on locally sponsored projects.
- [Guidance for Incorporating Sea Level Rise into Capital Planning](#) also now takes place as part of the City's Capital Planning Review process. All City projects now undergo a sea-level vulnerability assessment and must respond to anticipated consequences through redesign or relocation. SFPUC staff actively participated in the Mayor's Sea Level Rise Coordinating Committee and Working Group to develop the Sea Level Rise Guidance. The objective is to work with other City agencies towards a more holistic, integrated and coordinated response to climate change.



Embarcadero Waterfront
(Brittany Hosea-Small/KQED)

2. San Francisco Public Utilities Commission

Overview

The SFPUC provides retail drinking water and wastewater services to the City of San Francisco, wholesale water to three Bay Area counties (Alameda, San Mateo and Santa Clara), and green hydroelectric and solar power to municipal departments and retail electric customers. Headquartered in San Francisco, the SFPUC has approximately 2,500 employees working in seven counties and has a combined annual operating and capital budget of over \$2 billion. The SFPUC is comprised of three utility enterprises:

- **The Water Enterprise** serves more than 2.7 million people and is responsible for managing the transmission, treatment, storage and distribution of potable water to the City of San Francisco and 27 water agencies in three Bay Area counties – San Mateo, Santa Clara and Alameda.
- **The Wastewater Enterprise** serves San Francisco residents and operates three treatment plants for sewage and stormwater treatment as well as maintains nearly 1,000 miles of combined sewer and stormwater lines.
- **The Power Enterprise** provides green hydroelectric power to municipal customers in San Francisco. The Power Enterprise also operates CleanPowerSF, a program that enables the City to purchase cleaner power on behalf of local residents and support local jobs, stable energy prices and clean energy infrastructure.

Financial Policies

The San Francisco City Charter requires the SFPUC to exercise prudent financial stewardship of SFPUC assets by establishing “rates, fees and charges at levels sufficient to improve or maintain financial condition and bond ratings at or above levels equivalent to highly rated utilities of each enterprise under its jurisdiction, meet requirements and covenants under all bond resolutions and indentures..., and provide sufficient resources for the continued financial health (including appropriate reserves), operation, maintenance and repair of each enterprise, consistent with good utility practice.”

To serve the financial objectives and parameters established by the Commission, the SFPUC has established a [10-Year Financial Plan](#) as well as [Debt Management Policies and Procedures](#) for debt financings associated with the Water, Wastewater and Power Enterprises. In addition, the SFPUC maintains a [Fund Balance Reserve Policy](#), a [Debt Service Coverage Policy](#), and a [Capital Financing Policy](#). Last, the [Debt Policy of The City and County of San Francisco](#), established by

the Controller's Office of Public Finance, summarizes the City's existing debt policies and formally establishes them for all future debt.²

Environmental, Social, and Governance Policies and Programs

With the useful life of capital assets typically extending 30 years or more, climate mitigation and adaptation criteria are included in the SFPUC's capital planning and project selection process. Described below are SFPUC-level policies and programs that contribute to capital planning decisions informed by climate adaptation and/or mitigation and social inclusion.

The activities below have been organized into three categories: environmental, social, and governance (ESG):

Environmental

- [Community Choice Aggregation](#): CleanPowerSF is San Francisco's Community Choice Aggregation program. Administered by the SFPUC Power Enterprise, CleanPowerSF is a not-for-profit program launched in 2016 with a mission to provide San Francisco electricity customers with the choice of having their electricity supplied from clean, renewable sources at a competitive price. CleanPowerSF is now serving over 376,000 San Francisco customers with 90% renewable energy. Prior to CleanPowerSF, electricity accounted for 29% of the City's greenhouse gas emissions. Now, that total has dropped to 11%.
- [GoSolarSF](#): GoSolarSF is administered by the SFPUC Power Enterprise and provides incentives to help CleanPowerSF and Hetch Hetchy residential and business electric customers install solar panel systems. Together these systems produce 19.9 megawatts of renewable solar electric power.
- [Water Enterprise Stewardship Policy](#): The purpose of the Water Enterprise Environmental Stewardship Policy is to establish a long-term management policy for natural resources associated with the operation of the water system within the Tuolumne River, Alameda Creek, and Peninsula watersheds.
- [Green Infrastructure](#): Green infrastructure projects divert stormwater from the sewer system while beautifying San Francisco's neighborhoods, providing ecological function and urban habitat, and contributing to a bike and pedestrian friendly design. Green infrastructure technologies include rain gardens, permeable pavement, and rainwater harvesting systems. The SFPUC has completed 272 Green Infrastructure projects which diverts 63 million gallons of stormwater from the sewer system annually.
- [OneWaterSF](#): The objective of OneWaterSF is to optimize the use of finite water and energy resources with community and ecosystem needs, creating a more resilient and reliable future for the SFPUC.

² For information about SFPUC's Investor Relations and Financial Reports, see: <https://www.sfwater.org/index.aspx?page=164>

Social

- [Community Benefits](#): The SFPUC's Community Benefits Program focuses on Workforce Development, Education, Art, Environmental Justice/Land use, Neighborhood Partnerships, and Small Business Opportunities. The SFPUC is the first utility in the nation to adopt a [Community Benefits Policy](#).
- [Social Impact Partnership Program](#): The SFPUC is the first public utility in the country to implement a social impact program that advances corporate social responsibility as a part of its competitive bidding process. If awarded a contract, pre-identified "Community Benefit Commitments" become a binding contract term that must be delivered at no cost to the City. To date, these commitments have supported scholarships for college students, mentorship for middle-school students, internships for youth and young adults, child care for working parents, mentorship for small businesses, urban greening and access to healthy food. Since 2011, 74 contracts have included commitments totaling \$34 million in financial, volunteer and in-kind contributions.

Governance

- [SFPUC Commission](#): The SFPUC Commission consists of five members, nominated by the Mayor and approved by the Board of Supervisors. Their responsibility is to provide operational oversight in areas such as rates and charges for services, approval of contracts and organizational policy. Seat 1 of the commission is reserved for a member with experience in environmental justice policy and an understanding of environmental justice issues.
- [Citizens' Advisory Committee](#): The Citizens' Advisory Committee (CAC) provides recommendations to the General Manager of the SFPUC, the Commission itself and the San Francisco Board of Supervisors regarding the agency's long-term strategic, financial and capital improvement plans. Comprised of 17 appointees, the CAC includes a member appointed by the mayor who represents a regional or statewide environmental organization and a member appointed by the President of the Board of Supervisors who represents an environmental justice organization.
- [2020 Strategic Plan](#): In August 2016, The SFPUC Strategic Planning Steering Committee identified Environmental Stewardship as one of six goals to guide its work through the year 2020. Within Environmental Stewardship, the 2020 Strategic Plan specifies the goal to sustainably manage the resources entrusted in its care to ensure environmental and community health. This includes the following objectives:
 - Sustainably manage natural resources and physical systems to protect impacted people, water, land and ecosystems.
 - Develop, coordinate and communicate a comprehensive and consistent approach to mitigate and adapt to climate change.
 - Be resource efficient in all business operations.
 - Investigate the feasibility of implementing an environmental management system.

United Nations Sustainable Development Goals

With increased interest in the United Nations Sustainable Development Goals (SDGs) among investors and other stakeholders, impacts from SFPUC projects financed by green bonds are also shown aligned with several SDGs. To determine project impact, the SFPUC relied on the International Capital Market Association (ICMA) "Green and Social Bonds: A High-Level Mapping to the Sustainable Development Goals" (June 2019). See Appendix A: SFPUC Program Impacts Aligned to the United Nations Sustainable Development Goals (SDGs) and Appendix C: WSIP Green Bond Funded Project Impacts Aligned with the United Nations Sustainable Development Goals (SDGs).



Supply reliability retrofits to water supply pipelines

3. SFPUC Green Bond Program

Since 2015, the SFPUC has issued more than \$1.4 billion in green bonds to finance Water, Wastewater, and Power capital projects that advance climate change mitigation or adaptation, making the SFPUC one of the largest municipal issuers of green bonds in the United States. In 2017, the SFPUC was recognized by the Climate Bonds Initiative at its annual conference for being the first issuer worldwide to sell bonds under its water criteria. In 2018, the SFPUC became among the first signatories of the Green Bond Pledge. In 2019, the combined green bond programs of the City of San Francisco and the SFPUC were recognized as a global leader in the C40 report [Cities100](#). Finally, the SFPUC was awarded the 2019 US Municipal Green Bond of the Year by Environmental Finance.



The SFPUC adheres to the International Capital Market Association's Green Bond Principles four core components:

- Use of Proceeds: The SFPUC issues green bonds to finance projects with clear environmental benefits. Project categories include sustainable water and wastewater management, climate change adaptation and renewable energy.
- Process for Project Evaluation and Selection: San Francisco's numerous policies and programs described herein ensure sustainable capital planning and project selection. Further, the SFPUC engages third-party verifiers to validate selected projects meet required criteria. As part of the certification process, the SFPUC retained Sustainalytics to provide third-party verification that the bonds are aligned with the Climate Bonds Initiative.
- Management of Proceeds: The SFPUC records green bond proceeds in separate capital project funds available only to eligible projects. Non-eligible projects cannot access proceeds generated from green bonds.
- Reporting: The SFPUC publishes annually a project spending and management of proceeds report for each green bond issued throughout project construction. Beginning with the FY 2018-19 reports, in addition to project spending, the reports will also include project impacts as well as additional information in connection with the climate and sustainability activities of the SFPUC.

4. Water Enterprise Green Bond Impact Report

Water Enterprise green bonds issued to date have been used to fund the Water System Improvement Program (WSIP). The WSIP is a \$4.788 billion program consisting of 87 capital projects to repair, replace, and upgrade critical portions of the Regional Water System and the Local Water System. These projects were designed to meet specific objectives, which include:

- Improve the system to provide high-quality water that reliably meets all current and foreseeable local, State, and Federal requirements.
- Reduce vulnerability of the water system to damage from earthquakes.
- Increase system reliability to deliver water by providing the redundancy needed to accommodate outages.
- Provide improvements related to water supply/drought protection.
- Enhance sustainability through improvements that optimize protection of the natural and human environment.

The program consists of 87 projects - 35 local projects located within San Francisco (Local Program) and 52 regional projects (Regional Program). [WSIP Quarterly Reports](#) provide a detailed update on the status of the projects in each WSIP region: San Joaquin, Sunol Valley, Bay Division, Peninsula, San Francisco Regional and San Francisco Local. The reports also identify critical issues that SFPUC staff and management are addressing to keep the program on budget and on schedule. As of June 30, 2019, the WSIP program is 98% complete and the current forecasted date for overall completion is December 2021.

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 and businesses. (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 these facilities are within or near 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 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 renamed 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.

Project Environmental and Climate Impact Details

In 2008, the San Francisco Planning Commission certified WSIP as adequately fulfilling the requirements of the California Environmental Quality Act (CEQA).³ To determine project impact, the SFPUC relied on the International Capital Market Association (ICMA) “Green and Social Bonds: A High-Level Mapping to the Sustainable Development Goals” (June 2019). See Appendix C: WSIP Green Bond Funded Project Impacts Aligned with the United Nations Sustainable Development Goals (SDGs).

Project Spending Details

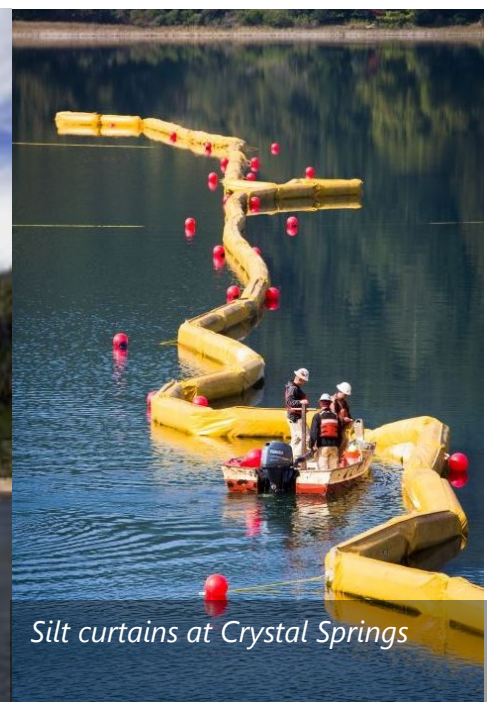
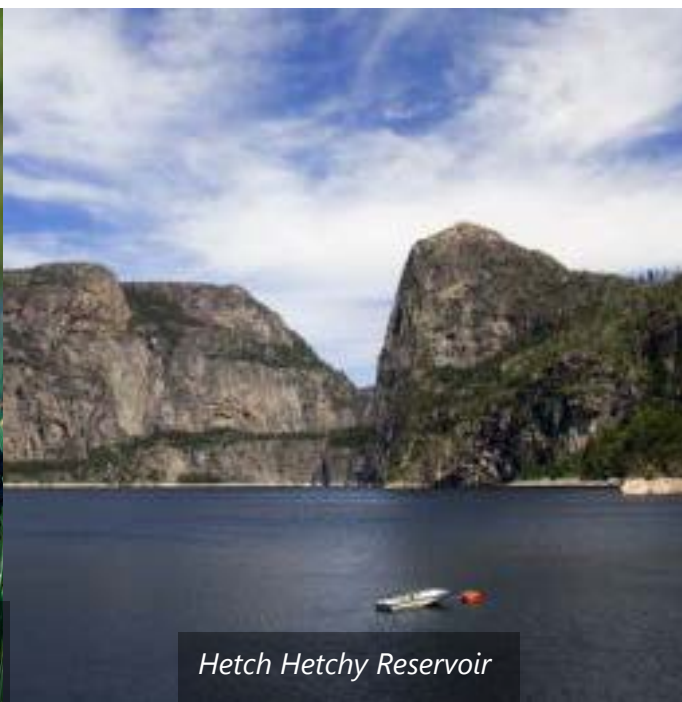
The tables below provide project spending details on WSIP projects funded or refinanced by the following bond issuances of the Water Enterprise of the Public Utilities Commission of the City and County of San Francisco (SFPUC):

- Water Revenue Bonds Series 2016 C (Green Bonds)
- Water Revenue Bonds Series 2017A (Green Bonds)
- Water Revenue Bonds (Refunding) (Green Bonds) Series 2017D

³ The Final Program Environmental Impact Report for WSIP can be found at <https://sfplanning.org/environmental-review-documents>

- Water Revenue Bonds (Refunding) (Green Bonds) Series 2017G

The proceeds have been allocated to finance or refinance projects within the WSIP and Sustainalytics determined that all WSIP projects are eligible to be financed with green bonds. See Appendix B: WSIP Bond Proceeds.



Appendix A: SFPUC Program Impacts Aligned to the United Nations Sustainable Development Goals (SDGs)⁴



SDG 4: Quality education

Ensure inclusive and equitable quality education and promote lifelong learning opportunities

SFPUC Program Impacts: Education

- SFPUC partners with community organizations, local school districts and City departments to teach youth about science, technology, engineering and math (STEM) and the role they can play to sustain our natural resources. Since 2012, SFPUC has partnered with 216 schools and organizations on 11 education programs serving over 77,000 youth.
- SFPUC provides [special curricula](#) and resources like [Big Ideas](#), a book providing teachers with a guide to teach Grades K-12 about SFPUC's water, power and sewer systems or [The Story of Poo](#), an animated video following a six-year old girl from San Francisco who learns about what takes place after she flushes the toilet.
- SFPUC and partners hold [classroom presentations](#) providing more than 2,500 kids with the opportunity to learn about how SFPUC systems operate and what they can do to conserve our natural resources.
- Through the SPARK Program, SFPUC staff and private sector partners serve as mentors to socio-economically disadvantaged students, volunteering more than 600 hours to collaborate with them on STEM projects while helping them explore real career opportunities.
- The [College Hill Learning Garden](#) provides children in primary school with an interactive garden equipped with curriculum-based tools. Since 2016, the Garden has partnered with 28 schools and organizations serving over 2,400 youth.

⁴ Developed in consultation with SFPUC senior management and [ICMA Green and Social Bonds: A High-Level Mapping to the Sustainable Development Goals](#); SDG impacts have not been verified by a third-party.



SDG 5: Gender equality

Achieve gender equality and empower all women and girls

SFPUC Program Impacts: Small Business Opportunities

- SFPUC partners with the National Association of Women in Construction and the Women's Business National Council to host the Annual Women in Construction Exposition. The Expo provides multiple benefits to attendees, from supporting women in the construction industry by sharing information on pre-apprenticeship programs to beginning a career in the industry. Other advantages include strengthening professional skills, growing successful companies and navigating the contract bidding process. Through the Expo, participants also have the opportunity to learn about construction opportunities with the SFPUC.
- SFPUC is a member of the Tuolumne Community Collaborative, group of more than 25 entities including education institutions, local contractors, professional service firms, and government agencies that support a pipeline of local workers in the construction industry. The Collaborative features a Pre-Apprenticeship Construction Training Program, and it recently celebrated an inaugural all-female class.



SDG 6: Clean water and sanitation

Ensure availability and sustainable management of water and sanitation for all

SBPUC Program Impacts: [Water System Improvement Program \(WSIP\)](#)

- Water system provides water supply, treatment and distribution services to 884,000 residents in San Francisco and to 1.8 million wholesale customers in surrounding Bay Area communities
- Improve the system to provide high-quality water that reliably meets all current and foreseeable local, State, and Federal requirements.
- Reduce vulnerability of the water system to damage from earthquakes.
- Increase system reliability to deliver water by providing the redundancy needed to accommodate outages.
- Provide improvements related to water supply/drought protection.
- Enhance sustainability through improvements that optimize protection of the natural and human environment.

SBPUC Program Impacts: [Sewer System Improvement Program \(SSIP\)](#)

- Provide sewer and stormwater collection and treatment services to 884,000 residents in San Francisco.
- Provide a reliable and resilient system that can respond to catastrophic events.
- Integrate green and grey infrastructure to manage stormwater and minimize flooding.
- Provide benefits to impacted communities by alleviating odors while providing both economic and job opportunities.
- Build facilities with climate change design criteria to respond more effectively to the rising sea level and other impacts.
- Achieve economic and environmental sustainability. Reuse and conserve the by-products of wastewater and stormwater treatment systems.
- Keep customer bills less than 2.5% of an average household income for a single-family residence.

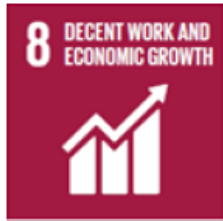


SDG 7: Affordable clean energy

Ensure access to affordable, reliable, sustainable and modern energy for all

SFPUC Program Impacts: Power

- The Power system serves 80% of the electricity consumed in San Francisco with minimum 90% renewable energy.
- Hetch Hetchy Power is San Francisco's full-service, publicly owned electric utility. As SFPUC drinking water flows downhill from Yosemite to the Bay Area, SFPUC harnesses the natural force of gravity to generate 100% greenhouse gas-free hydroelectric power.
- CleanPowerSF is San Francisco's official Community Choice Energy program which buys electricity from renewable sources like solar and wind, and puts that clean electricity on the power grid.



SDG 8: Decent work and economic growth

Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all

SFPUC Program Impacts: [Workforce Development](#)

- 1,400 local young people participate in [work-based learning opportunities and industry-related internships](#).
- The [Project Learning Grant](#) partnerships with 25-30 local community organizations provide youth with work-based learning opportunities related to water, power and sewer.
- Opened in 2013, the [Contractor's Assistance Center](#) is a free community resource that provides local, small businesses with the tools and resources to adequately get access to, compete for, and perform on the many contracting opportunities that come from SFPUC.
- SFPUC's Sewer System Improvement Program and Water System Improvement Program are possible through [project labor agreements](#) (PLAs). These are formal agreements with local labor unions which ensure that local workers and residents impacted by these capital projects have access to construction training and job opportunities. Over the years, PLAs have brought thousands of critically needed jobs to San Francisco, while building healthier, more reliable water and sewer systems. SFPUC's PLAs help to:
 - Provide access to a steady supply of skilled union workers
 - Pay family-sustaining prevailing wages and benefits
 - Harmonize safety protocols at work sites
 - Create careers in construction
- Project Pull, a paid internship program, pairs local high school students and incoming college freshmen with City staff who introduce them to job skills and technical careers. Since its inception in 1996, the program has provided more than 1,500 students with summer employment.
- Through [CityBuild Academy](#), an 18-week citywide construction program, SFPUC trains and connects local workers to job opportunities with our capital programs, creating more than 1,000 placements since 2006. Program participants are also able to access CityBuild's Women Leadership and Mentor Group.

- As a founding member of [BAYWORK](#) – a consortium of 29 water and wastewater Bay Area agencies—SFPUC collaboratively holds career fairs for hundreds of students and job seekers while providing workshops that keep existing workers up-to-date on skills and industry trends.

SFPUC Program Impacts: [Social Impact Partnership Program](#)

- The SFPUC is the first public utility in the country to implement a social impact program that advances corporate social responsibility as a part of its competitive bidding process.
- For Requests for Proposals valued at \$5 million and above, firms can receive up to 5 points (out of 100) for what they are willing to give-back to the local community in the areas of education, environmental justice, workforce and small business development and social innovation.
- To date, these commitments have supported scholarships for college students, STEM mentorship for middle-school students, paid internships for youth and young adults, pre-job barrier removal like providing child care, small business mentorship, and supporting urban greening and access to healthy food.



SDG 9: industry, innovation and infrastructure

Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation

SFPUC Program Impacts: [Water System Improvement Program \(WSIP\)](#)

- Water system provides water supply, treatment and distribution services to 884,000 residents in San Francisco and to 1.8 million wholesale customers in surrounding Bay Area communities
- Reduce vulnerability of the water system to damage from earthquakes.
- Increase system reliability to deliver water by providing the redundancy needed to accommodate outages.
- Provide improvements related to water supply/drought protection.
- Enhance sustainability through improvements that optimize protection of the natural and human environment.

SFPUC Program Impacts: [Sewer System Improvement Program \(SSIP\)](#)

- Provide sewer and stormwater collection and treatment services to 884,000 residents in San Francisco.
- Provide a reliable and resilient system that can respond to catastrophic events.
- Integrate green and grey infrastructure to manage stormwater and minimize flooding.
- Provide benefits to impacted communities by alleviating odors while providing both economic and job opportunities.
- Build facilities with climate change design criteria to respond more effectively to the rising sea level and other impacts.
- Achieve economic and environmental sustainability. Reuse and conserve the by-products of wastewater and stormwater treatment systems.
- Keep customer bills less than 2.5% of an average household income for a single-family residence.



SDG 10: Reduce Inequalities

Reduce inequality within and among countries

SBPUC Program Impacts: Environmental Justice and Land Use

- SBPUC's [Environmental Justice Policy](#) affirms and commits to the goals of environmental justice to prevent, mitigate, and lessen disproportionate impacts of SBPUC activities on communities. The SBPUC is the first public utility in the nation to adopt an Environmental Justice Policy.
- Located on six-acres of SBPUC land, [Hummingbird Farm](#) makes affordable produce available to communities disproportionately impacted by SBPUC operations. The farm services as a community hub, providing a space for individuals of all ages and abilities to participate in farming, educational activities and cultural celebrations.
- Through the Urban Watershed Stewardship Program, SBPUC partners with the City's Community Challenge Grant program to provide grants that support community projects that harvest and use rainwater, remove impervious surfaces, or implement green stormwater management facilities. Since the program's inception in 2009, SBPUC has removed more than 20,000 square feet of impervious concrete; planted more than 70 trees and 5,500 plants; installed cisterns capturing 25,000 gallons of rainwater; and engaged the community to provide more than 5,300 volunteer hours.

SBPUC Community Benefits Program Impacts: Neighborhood Revitalization

- Based in the historic Bayview Hunters Point Neighborhood, the [Southeast Community Facility Commission](#) provides guidance to the SBPUC and the San Francisco Board of Supervisors regarding strategic, financial and capital improvement plans, programming and operations for the Southeast Community Facility and Greenhouses. Southeast Investments have included:
 - 1,400 young people participate in internships and other work-based learning opportunities each year
 - Access to clean drinking water at three public schools in the neighborhood.
 - Nearly 50 contractors have completed a green infrastructure construction training program.



SDG 11: Sustainable Cities and Communities

Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development

SFPUC Program Impacts: Water System Improvement Program (WSIP)

- Water system provides water supply, treatment and distribution services to 884,000 residents in San Francisco and to 1.8 million wholesale customers in surrounding Bay Area communities.
- Improve the system to provide high-quality water that reliably meets all current and foreseeable local, State, and Federal requirements.
- Reduce vulnerability of the water system to damage from earthquakes.
- Increase system reliability to deliver water by providing the redundancy needed to accommodate outages.
- Provide improvements related to water supply/drought protection.
- Enhance sustainability through improvements that optimize protection of the natural and human environment.

SFPUC Program Impacts: Sewer System Improvement Program (SSIP)

- Provide sewer and stormwater collection and treatment services to 884,000 residents in San Francisco.
- Provide a reliable and resilient system that can respond to catastrophic events.
- Integrate green and grey infrastructure to manage stormwater and minimize flooding.
- Provide benefits to impacted communities by alleviating odors while providing both economic and job opportunities.
- Build facilities with climate change design criteria to respond more effectively to the rising sea level and other impacts.
- Achieve economic and environmental sustainability. Reuse and conserve the by-products of wastewater and stormwater treatment systems.
- Keep customer bills less than 2.5% of an average household income for a single-family residence.

SFPUC Program Impacts: Power

- The Power system serves 80% of the electricity consumed in San Francisco with minimum 90% renewable energy.

- Hetch Hetchy Power is San Francisco's full-service, publicly owned electric utility. As SFPUC drinking water flows downhill from Yosemite to the Bay Area, SFPUC harnesses the natural force of gravity to generate 100% greenhouse gas-free hydroelectric power.
- CleanPowerSF is San Francisco's official Community Choice Energy program which buys electricity from renewable sources like solar and wind, and puts that clean electricity on the power grid.



SDG 12: Responsible Consumption and Production

Ensure sustainable consumption and production patterns

SFPUC Program Impacts: [Water System Improvement Program \(WSIP\)](#)

- Water system provides water supply, treatment and distribution services to 884,000 residents in San Francisco and to 1.8 million wholesale customers in surrounding Bay Area communities.
- Improve the system to provide high-quality water that reliably meets all current and foreseeable local, State, and Federal requirements.
- Reduce vulnerability of the water system to damage from earthquakes.
- Increase system reliability to deliver water by providing the redundancy needed to accommodate outages.
- Provide improvements related to water supply/drought protection.
- Enhance sustainability through improvements that optimize protection of the natural and human environment.

SFPUC Program Impacts: [Sewer System Improvement Program \(SSIP\)](#)

- Provide sewer and stormwater collection and treatment services to 884,000 residents in San Francisco.
- Provide a reliable and resilient system that can respond to catastrophic events.
- Integrate green and grey infrastructure to manage stormwater and minimize flooding.
- Provide benefits to impacted communities by alleviating odors while providing both economic and job opportunities.
- Build facilities with climate change design criteria to respond more effectively to the rising sea level and other impacts.
- Achieve economic and environmental sustainability. Reuse and conserve the by-products of wastewater and stormwater treatment systems.
- Keep customer bills less than 2.5% of an average household income for a single-family residence.

SFPUC Program Impacts: [Power](#)

- The Power system serves 80% of the electricity consumed in San Francisco with minimum 90% renewable energy.

- Hetch Hetchy Power is San Francisco's full-service, publicly owned electric utility. As SFPUC drinking water flows downhill from Yosemite to the Bay Area, SFPUC harnesses the natural force of gravity to generate 100% greenhouse gas-free hydroelectric power. CleanPowerSF is San Francisco's official Community Choice Energy program which buys electricity from renewable sources like solar and wind, and puts that clean electricity on the power grid.



SDG 13: Climate Action

Take urgent action to combat climate change and its impacts

SFPUC Program Impacts: [Water System Improvement Program \(WSIP\)](#)

- Water system provides water supply, treatment and distribution services to 884,000 residents in San Francisco and to 1.8 million wholesale customers in surrounding Bay Area communities.
- Improve the system to provide high-quality water that reliably meets all current and foreseeable local, State, and Federal requirements.
- Reduce vulnerability of the water system to damage from earthquakes.
- Increase system reliability to deliver water by providing the redundancy needed to accommodate outages.
- Provide improvements related to water supply/drought protection.
- Enhance sustainability through improvements that optimize protection of the natural and human environment.

SFPUC Program Impacts: [Sewer System Improvement Program \(SSIP\)](#)

- Provide sewer and stormwater collection and treatment services to 884,000 residents in San Francisco.
- Provide a reliable and resilient system that can respond to catastrophic events.
- Integrate green and grey infrastructure to manage stormwater and minimize flooding.
- Provide benefits to impacted communities by alleviating odors while providing both economic and job opportunities.
- Build facilities with climate change design criteria to respond more effectively to the rising sea level and other impacts.
- Achieve economic and environmental sustainability. Reuse and conserve the by-products of wastewater and stormwater treatment systems.

SFPUC Program Impacts: [Power](#)

- The Power system serves 80% of the electricity consumed in San Francisco with minimum 90% renewable energy.
- Hetch Hetchy Power is San Francisco's full-service, publicly owned electric utility. As SFPUC drinking water flows downhill from Yosemite to the Bay Area, SFPUC harnesses the natural force of gravity to generate 100% greenhouse gas-free hydroelectric power.

- CleanPowerSF is San Francisco's official Community Choice Energy program which buys electricity from renewable sources like solar and wind, and puts that clean electricity on the power grid.



SDG 14: Life below water

Conserve and sustainably use the oceans, seas and marine resources for sustainable development

SFPUC Program Impacts: [Water System Improvement Program \(WSIP\)](#)

- Water system provides water supply, treatment and distribution services to 884,000 residents in San Francisco and to 1.8 million wholesale customers in surrounding Bay Area communities
- Provide improvements related to water supply/drought protection.
- Enhance sustainability through improvements that optimize protection of the natural and human environment.

SFPUC Program Impacts: [Sewer System Improvement Program \(SSIP\)](#)

- Provide sewer and stormwater collection and treatment services to 884,000 residents in San Francisco.
- Integrate green and grey infrastructure to manage stormwater and minimize flooding.
- Build facilities with climate change design criteria to respond more effectively to the rising sea level and other impacts.
- Achieve economic and environmental sustainability. Reuse and conserve the by-products of wastewater and stormwater treatment systems.



SDG 15: Life on land

Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification and halt and reverse land degradation and halt biodiversity loss

SFPUC Program Impacts: [Water System Improvement Program \(WSIP\)](#)

- Water system provides water supply, treatment and distribution services to 884,000 residents in San Francisco and to 1.8 million wholesale customers in surrounding Bay Area communities.
- Improve the system to provide high-quality water that reliably meets all current and foreseeable local, State, and Federal requirements.
- Reduce vulnerability of the water system to damage from earthquakes.
- Increase system reliability to deliver water by providing the redundancy needed to accommodate outages.
- Provide improvements related to water supply/drought protection.
- Enhance sustainability through improvements that optimize protection of the natural and human environment.

SFPUC Program Impacts: [Sewer System Improvement Program \(SSIP\)](#)

- Provide sewer and stormwater collection and treatment services to 884,000 residents in San Francisco.
- Provide a reliable and resilient system that can respond to catastrophic events.
- Integrate green and grey infrastructure to manage stormwater and minimize flooding.
- Build facilities with climate change design criteria to respond more effectively to the rising sea level and other impacts.

SFPUC Program Impacts: [Power](#)

- The Power system serves 80% of the electricity consumed in San Francisco with minimum 90% renewable energy.
- Hetch Hetchy Power is San Francisco's full-service, publicly owned electric utility. As SFPUC drinking water flows downhill from Yosemite to the Bay Area, SFPUC harnesses the natural force of gravity to generate 100% greenhouse gas-free hydroelectric power.
- CleanPowerSF is San Francisco's official Community Choice Energy program which buys electricity from renewable sources like solar and wind, and puts that clean electricity on the power grid.

Appendix B: WSIP Bond Proceeds⁵Water Revenue Bonds Series 2016 C (Green Bonds)
As of June 30, 2019

Project ⁶	Project Number	Estimated Use of Proceeds	Prior Years Spending	FY18-19 Spending	Total Expended
Bond/Commercial Paper Expense	CUW30001	\$3,084,618	\$3,084,618	\$2,876,364	\$5,960,983
Adit Leak Repairs	CUW35701	19,471,358	--	--	--
Regional GW Storage & Recovery	CUW30103	9,752,541	9,752,541	--	9,752,541
New Irvington Tunnel	CUW35901	3,534,658	--	--	--
Upper Alameda Creek Filter Gallery	CUW35201	1,856,862	996,441	207,520	1,203,961
Seismic BDPL @ Hayward Fault Ph 2	CUW35302	3,181,724	2,142,608	--	2,142,608
Lower Crystal Springs Dam Improvements	CUW35401	--	--	1,092	1,092
New Crystal Springs Bypass Tunnel	CUW35601	170	170.12	--	170
Alameda Siphon #4	CUW35902	74,987	19,471,358	--	19,471,358
Security Systems Upgrades	CUW36302	1,225,367	--	178,318	178,318
HTWTP Long Term Improvements	CUW36701	35,659,426	33,486,115	19,321	33,505,436
Peninsula Pipeline Seismic Upgrade	CUW36702	1,109	1,109	5,685	6,794
BDPL Reliability Upgrade - Tunnel	CUW36801	83,385,032	81,722,675	1,928	81,724,603
BDPL Reliability – Pipeline	CUW36802	42,522,804	42,028,366	44	42,028,411
Crystal Springs Ps & Cs – SA PI	CUW37101	11,682	11,682	366,207	377,889
San Joaquin Pipeline System	CUW37301	--	--	10	10
Rehab Existing San Joaquin Pipelines	CUW37302	--	--	1,673	1,673
Calaveras Dam Replacement	CUW37401	32,848,192	15,450,469	--	15,450,469
San Antonio Backup Pipeline	CUW37403	41,041	--	1,672	1,672
BDPL No 3 & 4 Cross Connection	CUW38001	--	--	1,818	1,818
SVWTP Expansion/Treated Water Reservoir	CUW38101	--	--	477	477

⁵ For more project information, including environmental impacts, budget and schedule, please see [WSIP Quarterly Reports](#).⁶ Eligible projects include all WSIP, subset only listed. Any changes from prior reports reflect reallocations within WSIP.

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Project⁶	Project Number	Estimated Use of Proceeds	Prior Years Spending	FY18-19 Spending	Total Expended
Tesla Treatment Facility	CUW38401	--	--	212	212
Habitat Reserve Program	CUW38802	18,914,745	18,914,745	71,286	18,986,032
SFPUC/EBMUD Intertie	CUW38901	173	172.55	--	173
Mitigation Planning	CUW38804	1,155,323	--	--	--
Program Environmental Impact Report	CUW38801	66,883	--	--	--
Program management Services – WSIP	CUW39201	--	--	199,315	199,315
Vegetation Restoration WSIP Sites	CUW38803	32,940			
Watershed Env. Improvement Program	CUW39401	--	--	677,865	677,865
Bay Division Pipeline Upgrade	CUWBDP01	--	--	587,397	587,397
Peninsula Water System Improvements	CUWPWI01	--	--	2,371,396	2,371,396
San Joaquin Water Sys Improve Projects	CUWSJI01	--	--	151,115	151,115
Sunol Valley Water System Improvements	CUWSVI01	--	--	977,271	977,271
Total ⁷		\$ 256,821,634	\$227,063,070	\$8,697,985	\$235,761,059

⁷ Totals may not match due to rounding and interest earnings.

Water Revenue Bonds Series 2017 A (Green Bonds)
As of June 30, 2019

Project⁸	Project Number	Estimated Use of Proceeds	Prior Years Spending	FY18-19 Spending	Total Expended
Regional Groundwater Storage & Recovery	CUW30103	\$11,831,464	\$11,831,464	--	\$11,831,464
Harding Park Recycled Water Project	CUW30204	--	34	--	34
Recycled-Water Project- Eastside	CUW30205	19,703	19,703	--	19,703
Lake Merced Pump Station Upgrade	CUW30901	630,939	630,939	--	630,939
Sutro Res – Rehab/Seismic Upgrade	CUW33701	23,855	23,855	--	23,855
Upper Alameda Creek Filter Gallery	CUW35201	--	--	264,536	264,536
Seismic BDPL @ Hayward Fault Ph 2	CUW35302	4,345,357	4,345,357	--	4,345,357
Lower Crystal Springs Dam Improvements	CUW35401	--	1,140	--	1,140
New Irvington Tunnel	CUW35901	4,792,673	4,792,673	--	4,792,673
Security Systems Upgrades	CUW36302	2,069,680	2,069,680	--	2,069,680
HTWTP Long Term Improvements	CUW36701	18,158,415	18,158,415	--	18,158,415
Peninsula Pipeline Seismic Upgrade	CUW36702	321,836	321,836	--	321,836
BDPL Reliability Upgrade - Tunnel	CUW36801	1,282,153	1,282,153	--	1,282,153
BDPL Reliability – Pipeline	CUW36802	259,886	259,886	--	259,886
Crystal Springs Ps & Cs – SA PI	CUW37101	51,297	51,297	--	51,297
San Joaquin Pipeline System	CUW37301	163,320	163,320	--	163,320
Rehab Existing San Joaquin Pipelines	CUW37302	--	259	--	259
Calaveras Dam Replacement	CUW37401	73,965,437	73,965,437	--	73,965,437
San Antonio Backup Pipeline	CUW37403	83,650	83,650	--	83,650
Crystal Springs PI #2 Replace (In City)	CUW37801	--	663	--	663
BDPL No 3 & 4 Cross Connection	CUW38001	--	1,240	--	1,240
SVWTP Expansion/Treated Water Reservoir	CUW38101	--	552	--	552
Tesla Treatment Facility	CUW38401	--	1,616	--	1,616

⁸ Eligible projects include all WSIP, subset only listed. Any changes from prior reports reflect reallocations within WSIP.

Project ⁹	Project Number	Estimated Use of Proceeds	Prior Years Spending	FY18-19 Spending	Total Expended
Habitat Reserve Program	CUW38802	2,349,645	2,349,645	--	2,349,645
Vegetation Restoration WSIP Sites	CUW38803	21,163	21,163	--	21,163
Baden and San Pedro Valve Lot	CUW39101	--	2,674	--	2,674
Watershed Environmental Improve Program	CUW39401	532,628	532,628	--	532,628
Bay Division Pipeline Upgrade	CUWBDP01	1,589,685	1,589,685	--	1,589,685
Peninsula Water System Improvements	CUWPWI01	2,098,561	2,098,561	--	2,098,561
San Joaquin Water Sys Improve Projects	CUWSJI01	490,141	490,141	--	490,141
Sunol Valley Water System Improvements	CUWSVI01	878,913	878,913	--	878,913
Total ¹⁰		\$125,960,401	\$125,968,578	\$264,536	\$126,233,113

⁹ Eligible projects include all WSIP, subset only listed. Any changes from prior reports reflect reallocations within WSIP.

¹⁰ Totals may not match due to rounding and interest earnings.

Water Revenue Bonds (Refunding) (Green Bonds) Series 2017D
As of June 30, 2019

Project¹¹	Project Number	Refunded by 2017D
WSIP Financing Costs	CUW30001	\$6,186,666
Lake Merced Water Level Restoration	CUW30101	76,065
San Francisco Groundwater Supply	CUW30102	5,861,124
Regional Groundwater Storage & Recovery	CUW30103	11,662,612
Recycled Water Project - Westside	CUW30201	224,619
Harding Park Recycled Water Project	CUW30204	397,958
Recycled-Water Project- Eastside	CUW30205	403,721
Lake Merced Pump Station Upgrade	CUW30901	2,337,855
East/West Transmission Main	CUW31501	28,069
Forest Hill Pump Station Upgrade	CUW32001	1,112,242
Forest Knolls Pump Station Upgrade	CUW32101	7,470
Mclaren Park Pump Station Upgrade	CUW32301	5,353
Sutro Res – Rehab/Seismic Upgrade	CUW33701	11,590,033
Le Grande Pump Station Upgrade	CUW33801	45,522
Upper Alameda Creek Filter Gallery	CUW35201	1,142,093
Seismic BDPL @ Hayward Fault Ph 2	CUW35302	17,176,100
Lower Crystal Springs Dam Improvements	CUW35401	815,302
New Crystal Springs Bypass Tunnel	CUW35601	20,647
Sunset Res – Upgrade/Rehab North Basin	CUW35801	17,096
New Irvington Tunnel	CUW35901	57,937,418
Alameda Siphon #4	CUW35902	631,907
Structural Rehab (Roof) – Pulgas Phase 3	CUW36103	181,583
Existing Dechlor Mods- Pulgas Phase 5	CUW36105	89,584
Installation of SCADA System PH II	CUW36301	249,506
Security Systems Upgrades	CUW36302	2,120,548

¹¹ Eligible projects include all WSIP, subset only listed. Any changes from prior reports reflect reallocations within WSIP.

Project ¹¹	Project Number	Refunded by 2017D
Lawrence Livermore Water Quality Improve	CUW36401	10,107
HTWTP Long Term Improvements	CUW36701	20,044,784
Peninsula Pipeline Seismic Upgrade	CUW36702	8,758,742
BDPL Reliability Upgrade - Tunnel	CUW36801	35,714,358
BDPL Reliability – Pipeline	CUW36802	7,502,792
Crystal Springs Ps & Cs – SA PI	CUW37101	36,587,850
U Mound Res – Upgrade (North Basin)	CUW37201	147,093
San Joaquin Pipeline System	CUW37301	1,618,466
Rehab Existing San Joaquin Pipelines	CUW37302	96,453
Calaveras Dam Replacement	CUW37401	48,044,405
San Antonio Backup Pipeline	CUW37403	14,976,671
Crystal Springs PI #2 Replace (In City)	CUW37801	6,524,771
San Andreas #3 Pipeline Installation	CUW37901	53,518
BDPL No 3 & 4 Cross Connection	CUW35301	1,330,315
SVWTP Expansion/Treated Water Reservoir	CUW38101	12,423,360
Tesla Treatment Facility	CUW38401	2,208,334
San Antonio Pump Station Upgrade	CUW38601	14,076
Habitat Reserve Program	CUW38802	17,745,619
Vegetation Restoration WSIP Sites	CUW38803	585,228
SFPUC/EBMUD Intertie	CUW38901	80,161
Baden and San Pedro Valve Lot	CUW39101	86,134
Watershed Environmental Improve Program	CUW39401	687,129
Other WSIP Projects ¹²	--	26,780
Total ¹³		\$335,588,236

¹² Includes expenditures for WSIP projects less than \$5,000.

¹³ Totals may not match due to rounding.

Water Revenue Bonds (Refunding) (Green Bonds) Series 2017G
As of June 30, 2019

Project¹⁴	Project Number	Refunded by 2017G
WSIP Financing Costs	CUW30001	\$495,370
Lake Merced Water Level Restoration	CUW30101	5,683
San Francisco Groundwater Supply	CUW30102	150,924
Regional Groundwater Storage & Recovery	CUW30103	394,643
Recycled Water Project - Westside	CUW30201	27,564
Harding Park Recycled Water Project	CUW30204	48,825
Recycled-Water Project- Eastside	CUW30205	47,845
Lake Merced Pump Station Upgrade	CUW30901	254,280
Forest Hill Pump Station Upgrade	CUW32001	135,593
Sutro Res – Rehab/Seismic Upgrade	CUW33701	1,010,822
Le Grande Pump Station Upgrade	CUW33801	5,586
Upper Alameda Creek Filter Gallery	CUW35201	37,483
Seismic BDPL @ Hayward Fault Ph 2	CUW35302	1,451,902
Lower Crystal Springs Dam Improvements	CUW35401	99,659
New Irvington Tunnel	CUW35901	6,441,819
Alameda Siphon #4	CUW35902	77,519
Structural Rehab (Roof) – Pulgas Phase 3	CUW36103	22,283
Existing Dechlor Mods- Pulgas Phase 5	CUW36105	10,993
Installation of SCADA System PH II	CUW36301	30,618
Security Systems Upgrades	CUW36302	183,153
HTWTP Long Term Improvements	CUW36701	681,830
Peninsula Pipeline Seismic Upgrade	CUW36702	228,439
BDPL Reliability Upgrade - Tunnel	CUW36801	3,610,135
BDPL Reliability – Pipeline	CUW36802	834,831

¹⁴ Eligible projects include all WSIP, subset only listed. Any changes from prior reports reflect reallocations within WSIP.




















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Project¹⁴	Project Number	Refunded by 2017G
Crystal Springs Ps & Cs – SA PI	CUW37101	3,364,069
U Mound Res – Upgrade (North Basin)	CUW37201	18,050
San Joaquin Pipeline System	CUW37301	99,222
Rehab Existing San Joaquin Pipelines	CUW37302	10,081
Calaveras Dam Replacement	CUW37401	851,556
San Antonio Backup Pipeline	CUW37403	1,391,486
Crystal Springs PI #2 Replace (In City)	CUW37801	788,021
San Andreas #3 Pipeline Installation	CUW37901	6,567
BDPL No 3 & 4 Cross Connection	CUW35301	157,346
SVWTP Expansion/Treated Water Reservoir	CUW38101	1,517,992
Tesla Treatment Facility	CUW38401	244,012
Habitat Reserve Program	CUW38802	1,865,984
Vegetation Restoration WSIP Sites	CUW38803	32,319
SFPUC/EBMUD Intertie	CUW38901	9,837
Baden and San Pedro Valve Lot	CUW39101	10,570
Watershed Environmental Improve Program	CUW39401	73,839
Other WSIP Projects ¹⁵	--	15,865
Total ¹⁶		\$26,744,612

¹⁵ Includes expenditures for WSIP projects less than \$5,000.

















¹⁶ Totals may not match due to rounding.



















Appendix C: WSIP Green Bond Funded Project Impacts Aligned with the United Nations Sustainable Development Goals (SDGs)¹⁷


















Project Name	Project Number	UN SDGs ¹⁸	Project and Environmental Impact Description	California Environmental Quality Act
Watershed and Environmental Improvement Program	CUW39401	 	Proactively manage, protect and restore environmental resources affected by Water System Improvement Program operations.	Program Environmental Impact Report
Baden & San Pedro Valve Lots Improvements	CUW39101	 	Implement structural upgrades to ensure operational flexibility in the event of an emergency, impacting a service population of 890,000.	Mitigated Negative Declaration
SFPUC/EBMUD Intertie	CUW38901	 	Improve water delivery and supply reliability to City of Hayward, a population of 160,000.	Program Environmental Impact Report
Vegetation Restoration of WSIP Sites	CUW38803	 	Restore and re-vegetate habitat areas temporarily impacted by construction at Water System Improvement Program sites to pre-construction condition.	Program Environmental Impact Report
Bioregional Habitat Reserve Program	CUW38802	 	Coordinate and consolidate approach to preserve, enhance, restore, or create about 2,350 acres of various habitats.	Program Environmental Impact Report
Program Environmental Impact Report	CUW38801	     	Analyze the environmental impact of the entire Water System Improvement Project.	Program Environmental Impact Report
Tesla Treatment Facility	CUW38401	  	Improve sustainable infrastructure by combining ultraviolet (UV) water treatment with a chemical treatment, impacting 2.7 million customers.	Final Environmental Impact Report


























¹⁷ For more project information, including environmental impacts, budget and schedule, please see [WSIP Quarterly Reports](#)























¹⁸ Developed in consultation with SFPUC senior management and [ICMA Green and Social Bonds: A High-Level Mapping to the Sustainable Development Goals](#); SDG impacts have not been verified by a third-party.

Project Name	Project Number	UN SDGs ¹⁸	Project and Environmental Impact Description	California Environmental Quality Act
SVWTP Expansion/Treated Water Reservoir	CUW38101	  	Increase water supply to 160 million gallons per day, impacting 2.7 million customers.	Final Environmental Impact Report
San Andreas #3 Pipeline Installation	CUW37901	 	Installation of water pipeline to San Francisco service area of 890,000. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
Crystal Springs PI #2 Replace (In City)	CUW37801	 	Improve seismic reliability of a pipeline delivering water to the San Francisco Peninsula. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
San Antonio Backup Pipeline	CUW37403	 	Increase operational flexibility and delivery reliability during climate and seismic emergencies, impacting 2.7 million customers. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
Calaveras Dam Replacement	CUW37401	    	Replace a seismically-vulnerable old dam with a new dam, including a fish ladder that supports and restores native aquatic resources. Dam provides water supply to 2.7 million customers.	Final Environmental Impact Report
Rehab Existing San Joaquin Pipelines	CUW37302	 	Establish a program of routine maintenance to ensure water delivery reliability to the entire San Francisco Peninsula, impacting 2.7 million customers. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Mitigated Negative Declaration

Project Name	Project Number	UN SDGs ¹⁸	Project and Environmental Impact Description	California Environmental Quality Act
San Joaquin Pipeline System	CUW37301	 	Improve delivery reliability and provide operational flexibility during maintenance activities or unplanned outages resulting from seismic or extreme weather, impacting 2.7 million customers. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
University Mound Res - Upgrade (North Basin)	CUW37201	  	Upgrade supply and delivery reliability to a San Francisco reservoir supplying about 25% of the City's tap water.	Categorical Exemption
Crystal Springs/San Andreas Transmission Upgrade	CUW37101	 	Improve water supply reliability between two reservoirs holding 28.7 billion gallons of water on the San Francisco Peninsula.	Final Environmental Impact Report
BDPL Reliability- Pipeline	CUW36802	 	Upgrade seismic and delivery reliability to the pipelines delivering San Francisco Peninsula's main source of water, impacting 2.7 million customers. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
BDPL Reliability Upgrade - Bay Tunnel	CUW36801	   	Upgrade seismic and delivery reliability to the tunnel connected to San Francisco Peninsula's main source of water, impacting 2.7 million customers, while avoiding negative impact on biodiversity, Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
Peninsula Pipeline Seismic Upgrade	CUW36702	 	Ensure seismic and supply reliability of pipelines on the San Francisco Peninsula, including preparedness for pipeline ruptures from landslides. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
HTWTP Long Term Improvements	CUW36701	  	Improve seismic and delivery reliability for the water treatment plant for San Francisco Peninsula's sole source of emergency water.	Final Environmental Impact Report

Project Name	Project Number	UN SDGs ¹⁸	Project and Environmental Impact Description	California Environmental Quality Act
Security Systems Upgrades	CUW36302	 	Establish necessary security features to protect important water service delivery systems.	Program Environmental Impact Report
Installation of SCADA System Ph II	CUW36301	 	Establish a common software platform to monitor flow and pressure in key locations in the City of San Francisco.	Categorical Exemption
Existing Dechlor Mods - Pulgas Phase 5	CUW36105	  	Ensure safe drinking water for Peninsula residents	Program Environmental Impact Report
Structural Rehab (Roof) - Pulgas Phase 3	CUW36103	 	Protect water quality and delivery reliability for Peninsula residents.	Mitigated Negative Declaration
Alameda Siphon #4	CUW35902	 	Provide redundancy to ensure continued water service to 2.7 million customers in case of major weather or seismic event.	Mitigated Negative Declaration
New Irvington Tunnel	CUW35901	 	Guarantee water service to 2.7 million customers in four Bay Area counties within 24 hours of a major weather or seismic event. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
Adit Leak Repairs	CUW35701	 	Upgrade supply and delivery reliability for water reservoir serving the Peninsula region.	Program Environmental Impact Report
New Crystal Springs Bypass	CUW35601	 	Guarantee water service to more than 1 million people in San Mateo and San Francisco counties within 36 hours of a major weather or seismic event.	Final Environmental Impact Report

Project Name	Project Number	UN SDGs ¹⁸	Project and Environmental Impact Description	California Environmental Quality Act
Lower Crystal Springs Dam Improvements	CUW35401	    	Guarantee water service to more than 1 million people in San Mateo and San Francisco counties within 36 hours of a major weather or seismic event.	Final Environmental Impact Report
BDPL No 3&4 Cross Connection	CUW35301	 	Seismic and supply reliability improvements to ensure delivery of water impacting 2.7 million customers. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Mitigated Negative Declaration
Alameda Creek Recapture Project	CUW35201	   	Recapture an estimated annual average of 7,178 acre feet of water to maintain water supply while protecting native fish populations.	Draft Environmental Impact Report
Regional Groundwater Storage and Recovery	CUW30103	   	Store 7.5 years of drinking water supply to use in drought years impacting 2.7 million customers.	Final Environmental Impact Report
Bay Division Pipeline Upgrade	CUW36802	 	Enhance delivery reliability of pipeline that delivers water to ratepayers on San Francisco Peninsula, impacting 2.7 million customers. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Program Environmental Impact Report
Forest Hill Pump Station Upgrade	CUW32001	 	Modernize existing mechanical and electrical systems with seismic upgrades to reliably deliver drinking water to San Francisco customers, impacting a service population of 890,000.	Categorical Exemption
Harding Park Recycled Water Project	CUW30204	   	Construct infrastructure to produce and deliver recycled water to irrigate 163 acres of public golf course greens.	Final Environmental Impact Report
Lake Merced Pump Station Upgrade	CUW30901	 	Modernize mechanical and electrical systems with seismic upgrades to reliably deliver drinking water to over 60% of San Francisco ratepayers.	Categorical Exemption

Project Name	Project Number	UN SDGs ¹⁸	Project and Environmental Impact Description	California Environmental Quality Act
Lake Merced Water Level Restoration	CUW30101	  	Maintain lake levels for the City of San Francisco's emergency source of water.	Program Environmental Impact Report
Le Grande Pump Station Upgrade	CUW33801	 	Modernize existing mechanical and electrical systems with seismic upgrades to reliably deliver drinking water.	Categorical Exemption
Recycled Water Project - Westside	CUW30201	   	Conserve water supplies by transitioning to recycled water for non-drinking purposes.	Final Environmental Impact Report
Recycled Water Project - Eastside	CUW30205	   	Serve about 2 million gallons per day of high quality recycled water for non-potable uses such as irrigation and toilet flushing.	Program Environmental Impact Report
San Francisco Groundwater Supply	CUW30102	   	Add groundwater to San Francisco's water supply to support reliability in the event of droughts and emergencies, impacting a service population of 890,000.	Final Environmental Impact Report
Seismic Upgrade of BDPL at Hayward Fault	CUW35302	 	Improve seismic and supply delivery reliability for the pipeline responsible for delivering water to the San Francisco Peninsula, impacting 2.7 million customers. Water transmission is largely gravity fed requiring minimal fossil fuel consumption.	Final Environmental Impact Report
Sutro Res - Rehab/Seismic Upgrade	CUW33701	  	Structural upgrades to ensure the water supply and reliability for San Francisco, impacting a service population of 890,000.	Categorical Exemption

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.

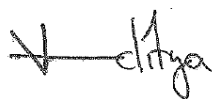
Sustainalytics is not responsible for any aspect of the projects referred to in this opinion and cannot be held liable if estimates, findings, opinions, or conclusions are incorrect. Thus, Sustainalytics shall not be held liable if any of the information or data provided by SFPUC and/or AGWA that is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

Selection of Nominated Projects:	<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>
Internal Processes and Controls	<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>
Reporting Prior to Issuance	<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
Verification of requirements specified under Selection of Nominated Projects	<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>	None
Verification of requirements specified under Internal Processes and Controls	<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>	None

	<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>	
Verification of requirements specified under Reporting Prior to Issuance	<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>	None

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.

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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.



SUSTAINALYTICS
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