



GREEN BOND REPORT

Fiscal Year 2020-21

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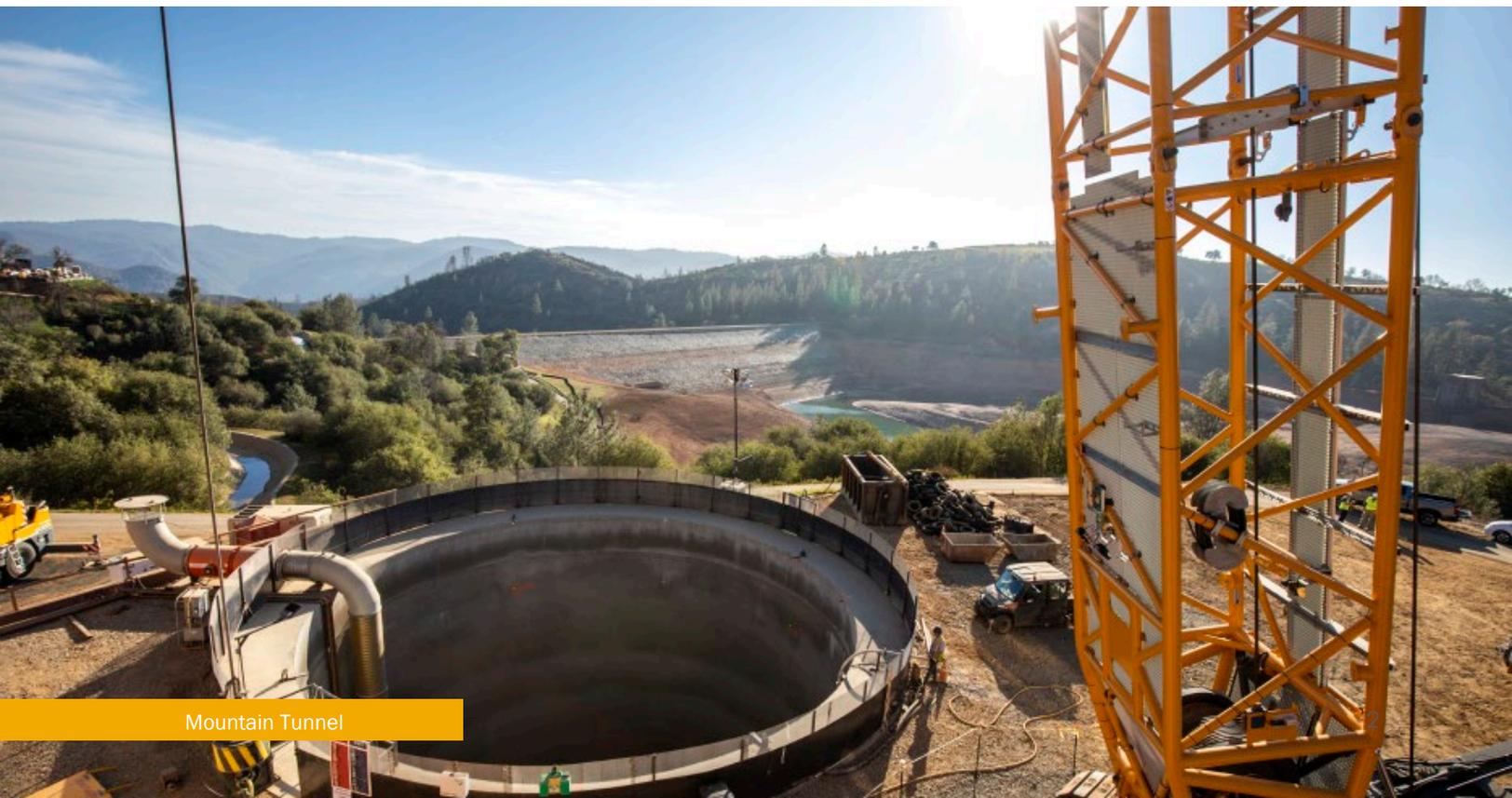
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Introduction

The San Francisco Public Utilities Commission (SFPUC) is a department of the City and County of San Francisco. Since the release of its first Climate Action Plan in 2004, San Francisco has been leading the way on local climate action, environmental justice, and developing and implementing innovative programs and outreach campaigns to engage with all San Franciscans.

These plans 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 State and local laws and regulations, 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 \$3 billion in certified green bonds across its three enterprise utilities: Water, Wastewater, and Power. Impacts from the projects financed by bonds include increased water storage, application of green infrastructure to manage stormwater, and upgrades to renewable energy generation facilities.

In addition to providing project impact information, this report seeks to highlight associated project co-benefits and describe the context in which climate and social inclusion informs the SFPUC's capital planning decisions. This report reflects activities through June 30, 2021.



Kirkwood Powerhouse

Power Enterprise Green Bond Impact Report

On May 20, 2015 the SFPUC issued Power Revenue Bonds, Series 2015A (Green Bonds) which generated \$30,200,000 in project fund proceeds. This was the SFPUC's first Green Bonds issuance. The SFPUC self-certified the green bonds. The purpose of designating the bonds as Green Bonds was to communicate to investors the environmentally beneficial projects as outlined in the Power Revenue Bonds Official Statement. Proceeds funded the following project areas:

- Hetch Hetchy Project hydroelectric generation facilities
- Other renewable energy projects, such as biomass and biowaste, solar and wind
- Energy conservation projects, such as energy-efficient streetlights.

The reconstruction or replacement projects funded by the 2015 Series A Bonds involve generation components of the hydroelectric facilities of the Hetch Hetchy Project which produces 100% greenhouse gas-free electricity. The majority of these funds were earmarked for a project to rewind generators at the Moccasin Powerhouse, one of three hydroelectric powerhouses operated by the SFPUC.

In early 2016, the SFPUC retained Sustainalytics to review a partial reallocation of green bond proceeds to included additional eligible projects, see Appendix D: Green Bond Verification Report.

Green Bond Spending Details

The proceeds from the green bond issuances are separately tracked and allocated to designated eligible projects. Spending by bond and eligible project is detailed below.



Green Bond Proceeds

Power Bond Series 2015A As of June 30, 2021

Project	Estimated Use of Proceeds	Prior Years Spending	FY 20-21 Spending	Remaining
Hydroelectric Powerhouse Controls Upgrade	\$32,414	\$32,414	\$-	\$2,163,084
Kirkwood Penstock Rehabilitation	2,667,250	1,789,614	-	1,755,272
Moccasin Penstock Rehabilitation	2,465,798	1,447,514	783,522	352,047
Mountain Tunnel Hydroelectric Conveyance	11,332,750	10,706,329	140,433	1,112,409
Oil Containment Upgrades for Holm & Kirkwood Hydroelectric Facilities	812,147	812,147	-	-
Other Powerhouse Projects - Holm Unit 2	13,394,890	12,919,402	9,345	1,381,507
Total	30,200,000*	27,707,419	933,300	1,559,281*

*Budget in excess of project fund deposit to come from other funding sources

Project Environmental Impacts Aligned with United Nations Sustainable Development Goals¹

Project Name	Project Number	United Nations Sustainable Development Goals	Environmental Impact Description	California Environmental Quality Act (CEQA)
Hydroelectric Powerhouse Controls Upgrade	10014086	  	<p>This project will improve the reliability and efficiency of a 90 megawatt hydroelectric plant which provides about 430 gigawatt hours of energy per year. This project will overhaul a two-unit hydroelectric plant, upgrading the electrical motors, and the supporting components and auxiliary systems of the hydroelectric plant with new technology. The expected annual generation following the project is 460 gigawatt hours of energy per year, an increase of about 30 gigawatt hours or 7 percent. Water that flows through this hydroelectric plant serves 2.7 million water customers in the Bay Area.</p>	Categorical Exemption
Kirkwood Penstock Rehabilitation	10014085	  	<p>Kirkwood Penstock is a water conveyance system that provides a dual purpose; water conveyance for a 123 megawatt hydroelectric plant, and a water supply conveyance for 2.7 million customers in the Bay Area. This project will improve the reliability of the water conveyance system by monitoring natural ground movement and provide for replacement parts to reduce return-to-service times in the event of failure.</p>	Categorical Exemption

¹ Developed in consultation with SFPUC senior management and [ICMA Green, Social and Sustainability Bonds: A High-Level Mapping to the Sustainable Development Goals](#). SDG impacts have not been verified by a third-party.

Project Name	Project Number	United Nations Sustainable Development Goals	Environmental Impact Description	California Environmental Quality Act (CEQA)
Moccasin Penstock Rehabilitation	10014088		<p>Moccasin Penstock is a water conveyance system that provides a dual purpose; water conveyance for a 90 megawatt hydroelectric plant, and a water supply conveyance for 2.7 million customers in the Bay Area. This project will improve the reliability of a nearly 100 year old pipe, replacing sections of pipe that are likely to fail.</p>	<p>Categorical Exemption</p>
Mountain Tunnel Hydroelectric Conveyance	10014113 10014114		<p>Mountain Tunnel is a water conveyance system that provides a dual purpose; water conveyance for a 90 megawatt hydroelectric plant, and a water supply conveyance for 2.7 million customers in the Bay Area. This project will improve the reliability of the tunnel. The hydroelectric plant fed by Mountain Tunnel produces about 430 gigawatt hours of energy per year.</p>	<p>Mitigated Negative Declaration</p>
Oil Containment Upgrades for Holm & Kirkwood Hydroelectric Facilities	10014078		<p>This project will upgrade the water treatment system at two hydroelectric plants to ensure storm water and process water releases are in compliance with the California State Water Quality Standards.</p>	<p>Categorical Exemption</p>
Other Powerhouse Projects - Holm Unit 2	10014075		<p>This project will improve the reliability and efficiency of a 93 megawatt hydroelectric unit which provides about 360 gigawatt hours of energy per year. This project replaces supporting components and auxiliary systems of the hydroelectric plant with new, more efficient technology. The expected annual generation following the project is 370 gigawatt hours of energy per year, an increase of about 10 gigawatt hours or 3 percent.</p>	<p>Categorical Exemption</p>

Case Study: Mountain Tunnel Improvements

Mountain Tunnel is an approximately 19-mile-long water tunnel that has been serving the Bay Area since 1925 as part of the Hetch Hetchy Regional Water System. It transmits drinking water originating from Hetch Hetchy Reservoir through Kirkwood Powerhouse, where it generates hydropower, to Priest Reservoir downstream. Water flows entirely by gravity through this tunnel, which is unlined upstream for over 7 miles and has an unreinforced concrete lining for 11 miles in its downstream section.

Constructed between 1917 and 1925, this tunnel has been in service for more than 90 years. Inspections of the tunnel showed deterioration of the tunnel lining and other deficiencies. These deficiencies result in reduced flow rate, increased groundwater intrusion, and increased turbidity. The deficiencies also diminish the ability to provide drinking water reliably to customers, and increase the difficulty of performing maintenance in the tunnel during normal operation.

To address the deficiencies, the repairs and improvements include:

- Repair with wired mesh and shotcrete the defects in the [11 miles of existing tunnel](#) lining to fix deterioration;
- Construct a new 1075-foot Adit Tunnel at Priest Reservoir to improve maintenance access;
- Construct a new Flow Control Facility with large flow control valves at the downstream end of the tunnel near Priest Reservoir to better control pressure in the tunnel, help protect the tunnel lining, and improve operational flexibility;
- Lay concrete along the floor of approximately 5,000 feet of the unlined portions of the tunnel to improve maintenance access and improve hydraulic flow;
- Construct a 750-foot bypass tunnel (siphon extension) at South Fork Siphon to reduce river water infiltration and associated adverse water quality effects;
- Construct a larger entry portal access at Early Intake to facilitate maintenance inside the tunnel;
- Make surface improvements at one of the shaft locations to reduce rainwater infiltration into the tunnel;
- Remove debris that has settled on the floor of the tunnel to improve hydraulic flow;
- Install slope protection, roadway stabilization and drainage improvements to provide safer access to tunnel entry points; and
- Perform environmental mitigations and site restoration in compliance with permit requirements.

Appendix A: State, City and SFPUC Legal, Regulatory, Policies and Programs

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. The [California Climate Policy Dashboard](#) is a project from the Center for Law, Energy & the Environment at the University of California at Berkeley. It seeks to provide a concise, easy-to-use overview of some of the major California climate laws and programs and introduce readers to some of the state regulators responsible for implementing them. Described below are selected policies and programs related to the SFPUC's capital planning:

- Assembly Bill 32 (Nunez, 2006) and Senate Bill 32 (Pavley, 2016)-
 - Landmark legislation requiring California to reduce its overall greenhouse gas emissions to 1990 levels by 2020 and 40% below 1990 levels by 2030, and appointing the California Air Resources Board to develop policies to achieve this goal.
- Assembly Bill 1482 (Gordon, 2015), Senate Bill 246 (Wiechowski, 2015), Senate Bill 379 (Jackson, 2015), Assembly Bill 2800 (Quirk, 2016), Senate Bill 1035 (Jackson, 2018); Senate Bill 20 (Lara, 2018)
 - State laws calling for preparation of state climate adaptation strategy, establishing the Office of Planning and Research's Integrated Climate Adaptation and Resiliency Program, requiring local governments to include adaptation and resiliency strategies in general plans, requiring state agencies to account for climate change when planning new infrastructure, and establishing a risk transfer/insurance working group.
- Climate Change Scoping Plan
 - California's comprehensive plan outlining the state's approach to achieving its greenhouse gas emission reduction targets, including SB 32's goal of reducing emissions 40% below 1990 levels by 2030

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. Between 1990 and 2019, San Francisco's carbon footprint was reduced by 41% while population increased 22% and the GDP increased 199%.

The [2021 San Francisco Climate Action Plan](#) is the result of a multi-year process developed by the San Francisco Department of the Environment with support and collaboration from many individuals and institutions, including the SFPUC. The Plan charts a pathway to achieve net-zero greenhouse gas emissions and works toward addressing racial and social equity, public health, economic recovery, resilience and providing safe and affordable housing to all. The Plan aligns to San Francisco's Climate Action Framework:

SAN FRANCISCO'S CLIMATE ACTION FRAMEWORK

Net-Zero Emissions Citywide By 2040
Racial, Social & Economic Equity



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 160-19, aligning 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 two 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.

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.

² For information about SFPUC's Investor Relations and Financial Reports, see: <https://sfpuc.org/about-us/reports/debt-management-and-disclosure-reports>

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

Environmental

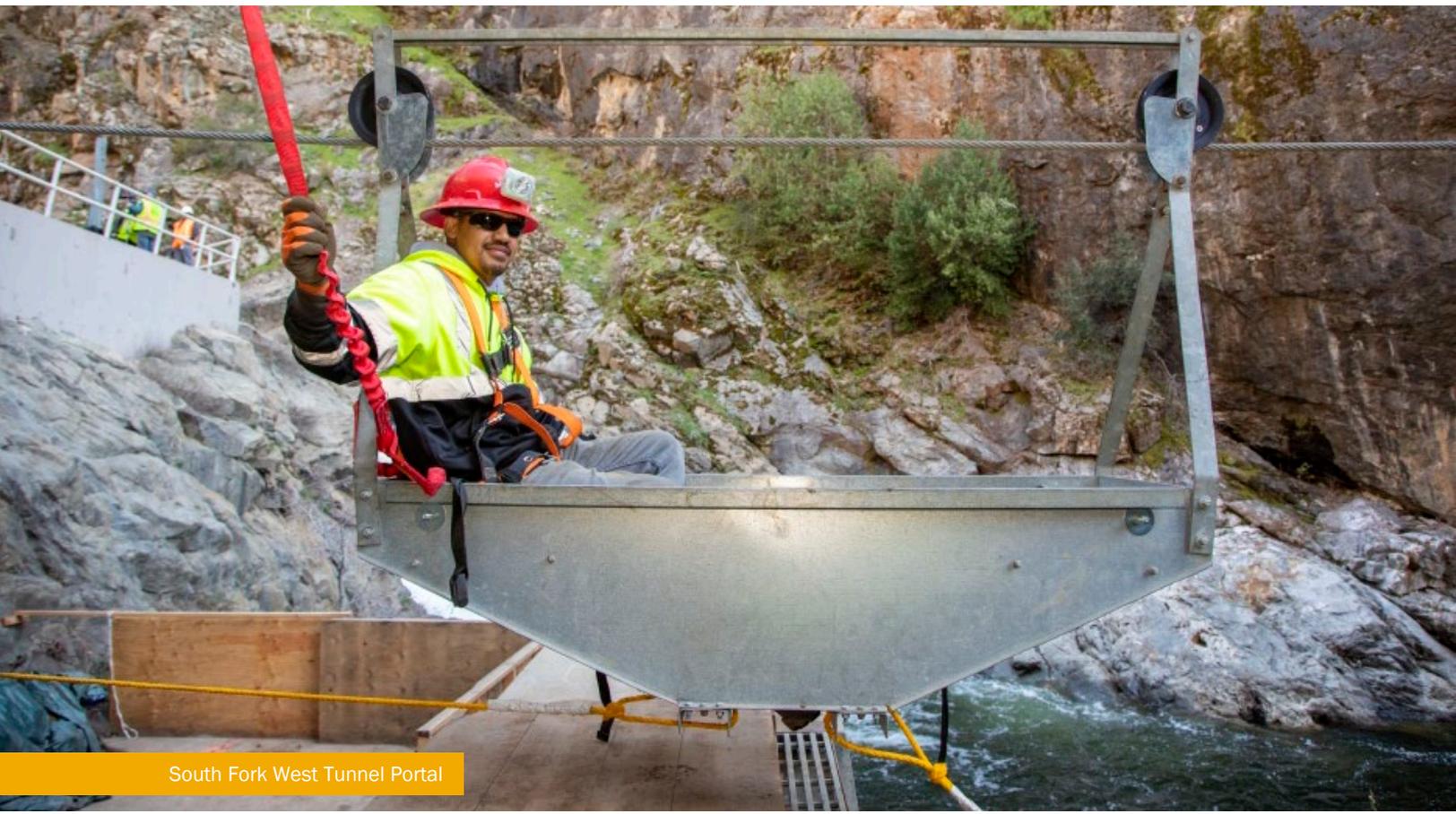
- [Community Choice Aggregation](#): CleanPowerSF is San Francisco's Community Choice Aggregation program. Administered by the SFPUC Power Enterprise, CleanPowerSF is a not-for-profit program launched in 2016 with a mission to provide San Francisco electricity customers with the choice of having their 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 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.

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 to 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 aligned with several (SDGs). To determine project impact, the SFPUC relied on the International Capital Market Association (ICMA) “Green, Social and Sustainability Bonds: A High-Level Mapping to the Sustainable Development Goals” (June 2020).



Appendix B: SFPUC Green Bonds Program

Since 2015, the SFPUC has issued more than \$3 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 2021, 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.

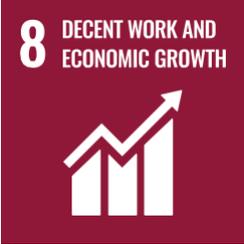


The SFPUC adheres to the International Capital Market Association's Green Bond Principles four core components:

- **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 the 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.

Appendix C: SFPUC Climate and Social Inclusion Impacts Aligned to the United Nations Sustainable Development Goals (UN SDGs)

United Nations Sustainable Development Goal	SFPUC Program Impact
 <p>4 QUALITY EDUCATION</p>	<p><u>Education</u>: The SFPUC is committed to preparing the next generation of environmental stewards and continuing to engage with existing generations to prevent pollution and sustain our natural resources. The SFPUC believes that everyone has a role to play in maintaining the environment and is proud to empower its service area communities with the resources needed to do it.</p>
 <p>5 GENDER EQUALITY</p>	<p><u>Small Business Opportunities</u>: The SFPUC is dedicated to increasing women in the construction trades. The 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 SFPUC is also proud to be a member of the Tuolumne Community Collaborative, group of more than 25 entities including education institutions, local contractors, professional services 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. Through the program, participants study construction industry best practices, experience hands-on training, learn construction safety, and receive project-specific worker certifications.</p>
 <p>6 CLEAN WATER AND SANITATION</p>	<p><u>The Water System Improvement Program</u>: The Water System Improvement Program (WSIP) is a \$4.8 billion dollar, multi-year capital program to upgrade the SFPUC's regional and local water systems. The program will deliver capital improvements that enhance the SFPUC's ability to provide reliable, affordable, high quality drinking water in an environmentally sustainable manner to 2.7 million people in the greater Bay Area. The program consists of 87 projects - 35 local projects located within San Francisco and 52 regional projects, spread over seven counties from the Sierra foothills to San Francisco.</p>
 <p>14 LIFE BELOW WATER</p>	<p><u>The Sewer System Improvement Program</u>: The Sewer System Improvement Program (SSIP) is a 20-year citywide investment to upgrade our aging sewer infrastructure to ensure a reliable, sustainable and seismically safe sewer system now and for generations to come.</p>
 <p>7 AFFORDABLE AND CLEAN ENERGY</p>	<p><u>Power</u>: For 100 years, the San Francisco Public Utilities Commission (SFPUC) has been generating greenhouse gas-free hydropower as Our City's full-service, publicly owned electric utility. This clean Hetch Hetchy Power energizes our schools, MUNI, street lights, City Hall, SFO Airport, the Zoo, and other civic institutions and private facilities. In 2016, Our City launched CleanPowerSF, a community choice aggregation program, to introduce even more renewable energy from sources like wind and solar to the electric grid. Today, CleanPowerSF powers more than 376,000 San Francisco residents and businesses.</p>

<p>United Nations Sustainable Development Goals</p>	<p>SFPUC Program Impact</p>
 <p>8 DECENT WORK AND ECONOMIC GROWTH</p>	<p><u>Workforce Development</u>: As one of the City's largest employers, the SFPUC is fostering a skilled and diverse local workforce that manages water, power and sewer operations and is connected to the communities we all call home. SFPUC's workforce development programs connect local youth and adults with learning, apprenticeship, job training, employment, and business opportunities. These programs support a strong, inclusive, local economy and a skilled, diverse, local workforce for today and tomorrow.</p> <p><u>Social Impact Partnership Program</u>: The SFPUC views its capital projects as investments – in the future of its facilities, services and its communities. As the SFPUC upgrades its systems and operations, private sector partners join the SFPUC in being a good neighbor to the communities affected by the operation and improvement of water, wastewater, and power services. By including community benefits criteria in our Requests for Proposals (RFP) with anticipated contracts of \$5 million or more, SFPUC provides its contracting community with an opportunity to earn extra points during the bidding process for their demonstrated commitment to community benefits and environmental justice. Social Impact Partners— professional services and construction firms in fields such as engineering, architecture, resource management and technology— provide resources and opportunities in the communities where SFPUC operates and provides services. These commitments include direct financial contributions, volunteer, and in-kind donations to local schools and nonprofits.</p>
 <p>9 INDUSTRY, INNOVATION AND INFRASTRUCTURE</p>	<p><u>The Water System Improvement Program</u>: The Water System Improvement Program (WSIP) is a \$4.8 billion dollar, multi-year capital program to upgrade the SFPUC's regional and local water systems. The program will deliver capital improvements that enhance the SFPUC's ability to provide reliable, affordable, high quality drinking water in an environmentally sustainable manner to 2.7 million people in the greater Bay Area. The program consists of 87 projects - 35 local projects located within San Francisco and 52 regional projects, spread over seven counties from the Sierra foothills to San Francisco. The current forecasted date to complete the overall WSIP is December 2021.</p> <p><u>The Sewer System Improvement Program</u>: The Sewer System Improvement Program (SSIP) is a 20-year citywide investment to upgrade our aging sewer infrastructure to ensure a reliable, sustainable and seismically safe sewer system now and for generations to come.</p>
 <p>10 REDUCED INEQUALITIES</p>	<p><u>Environmental Justice and Land Use</u>: The SFPUC works hard everyday to provide fundamental environmental benefits through water, power and sewer services. The SFPUC recognizes there are challenges to providing these services as some parts of our community face a greater burden than others due to the location of facilities in their neighborhoods. SFPUC works with these communities to understand their needs and lessen the effects caused by operations. The SFPUC is proud to be the first public utility in the nation to develop an Environmental Justice Policy which guides efforts to support environmentally healthy and safe communities where we live, work, learn and play. As part of its mission, the SFPUC also maintains and preserves more than 590,000 acres of land to protect our natural resources and critical infrastructure. The SFPUC often has the opportunity to use land for more than one purpose and when possible, the SFPUC partners with local leaders to support innovative uses which benefit the environment and enhance the quality of life for the SFPUC's service area residents.</p>

United Nations Sustainable Development Goals	SFPUC Program Impact
 <p>10 REDUCED INEQUALITIES</p>	<p>Grants: From Tuolumne County, to San Francisco, to the Peninsula, the SFPUC is especially committed to providing opportunities in the neighborhoods most impacted by its water, power and sewer operations. As SFPUC upgrades its facilities and executes the Agency's capital projects, it ensures these efforts support public health, jobs, learning and education opportunities in these communities. SFPUC is proud of leveraging the work done every day to create spaces and programs that help to make these neighborhoods a better place to live, work and play.</p>
 <p>11 SUSTAINABLE CITIES AND COMMUNITIES</p>  <p>12 RESPONSIBLE CONSUMPTION AND PRODUCTION</p>  <p>13 CLIMATE ACTION</p>  <p>15 LIFE ON LAND</p>	<p>Power: For 100 years, the San Francisco Public Utilities Commission (SFPUC) has been generating greenhouse gas-free hydropower as Our City's full-service, publicly owned electric utility. This clean Hetch Hetchy Power energizes our schools, MUNI, street lights, City Hall, SFO Airport, the Zoo, and other civic institutions and private facilities. In 2016, Our City launched CleanPowerSF, a community choice aggregation program, to introduce even more renewable energy from sources like wind and solar to the electric grid. Today, CleanPowerSF powers more than 376,000 San Francisco residents and businesses.</p> <p>The Water System Improvement Program: The Water System Improvement Program (WSIP) is a \$4.8 billion dollar, multi-year capital program to upgrade the SFPUC's regional and local water systems. The program will deliver capital improvements that enhance the SFPUC's ability to provide reliable, affordable, high quality drinking water in an environmentally sustainable manner to 2.7 million people in the greater Bay Area. The program consists of 87 projects - 35 local projects located within San Francisco and 52 regional projects, spread over seven counties from the Sierra foothills to San Francisco.</p> <p>The Sewer System Improvement Program: The Sewer System Improvement Program (SSIP) is a 20-year citywide investment to upgrade our aging sewer infrastructure to ensure a reliable, sustainable and seismically safe sewer system now and for generations to come.</p>

REVIEW OF SFPUC'S GREEN BOND REALLOCATION OF FUNDS

May 10th, 2016

San Francisco Public Utilities Commission (SFPUC) has engaged Sustainalytics to review the reallocation of its Series A Power Revenue Bonds (Green Bonds) funds from the rewind of hydropower generators at the Moccasin Powerhouse to the Mountain Tunnel Rehabilitation Project and Penstock¹ Rehabilitation Projects.

Background

In 2015, SFPUC issued its Series A Power Revenue Bonds (Green Bonds) with proceeds amounting to 32,025,000 USD. The purpose of designating the bonds as Green Bonds was to enable investors to invest in “environmentally beneficial projects”, also referred to as “Green Projects”, as outlined in the Power Revenue Bonds Official Statement (“Official Statement 2015”).² Such projects include:

- i) Hetch Hetchy Project hydroelectric generation facilities;
- ii) Other renewable energy projects, such as biomass and biowaste, solar and wind, and;
- iii) Energy conservation projects such as energy efficient streetlights.

The reconstruction or replacement projects expected to be funded by the 2015 Series A Bonds all involve generation components of the hydroelectric facilities of the Hetch Hetchy Project which produces greenhouse gas-free electricity. The majority of these funds were earmarked for a project to rewind generators at the Moccasin Powerhouse, part of the Hetch Hetchy Project. The Hetch Hetchy Project is composed of three hydroelectric powerhouses: the Moccasin Powerhouse, which includes a small, in-line hydroelectric unit, the Kirkwood Powerhouse and the Holm Powerhouse. The Moccasin Powerhouse relies on gravity-driven water flowing downhill from the Hetch Hetchy reservoir via Mountain Tunnel and the Moccasin Penstocks. The Kirkwood Powerhouse relies on the Kirkwood Penstock immediately preceding the powerhouse that conveys water to its hydropower generation facilities (see map Appendix A).

¹ Penstocks are conveyance pipes which transport water to powerhouses in SFPUC's Hetch Hetchy Project.

² Power Revenue Bonds Official Statement 2015.

Reallocation of Use of Proceeds Funds

In 2016, SFPUC determined that Mountain Tunnel was in need of urgent, critical repair and should thus be prioritized over the reconstruction or replacement of powerhouse generators in order to ensure the continued supply of water and electricity to SFPUC's customers. The SFPUC further determined that the penstocks are likewise in need of immediate repair and therefore is planning to reallocate Green Bond proceeds from generator repair to the Mountain Tunnel Rehabilitation Project and the Penstock Rehabilitation Projects.

Environmental Impact of Mountain Tunnel and Penstocks Rehabilitation Projects

Through consultation with Sustainalytics and through the provision of supporting documents, SFPUC confirmed that Mountain Tunnel and Penstocks Rehabilitation projects have undergone a Categorical Exemption Analysis, which demonstrated that the project would not result in adverse environmental effects. The Planning Department of the City of San Francisco determined that this project is categorically exempt under the California Environmental Quality Act (CEQA) Section 15301, Class 1 (Existing Facilities). Class 1 includes minor alteration of existing public or private structures, facilities, mechanical equipment, or topographical features, involving negligible or no expansion of use. Projects would be conducted in compliance with applicable federal, State, and local regulations and under contractual provisions prohibiting work in violation of applicable regulations and plans.

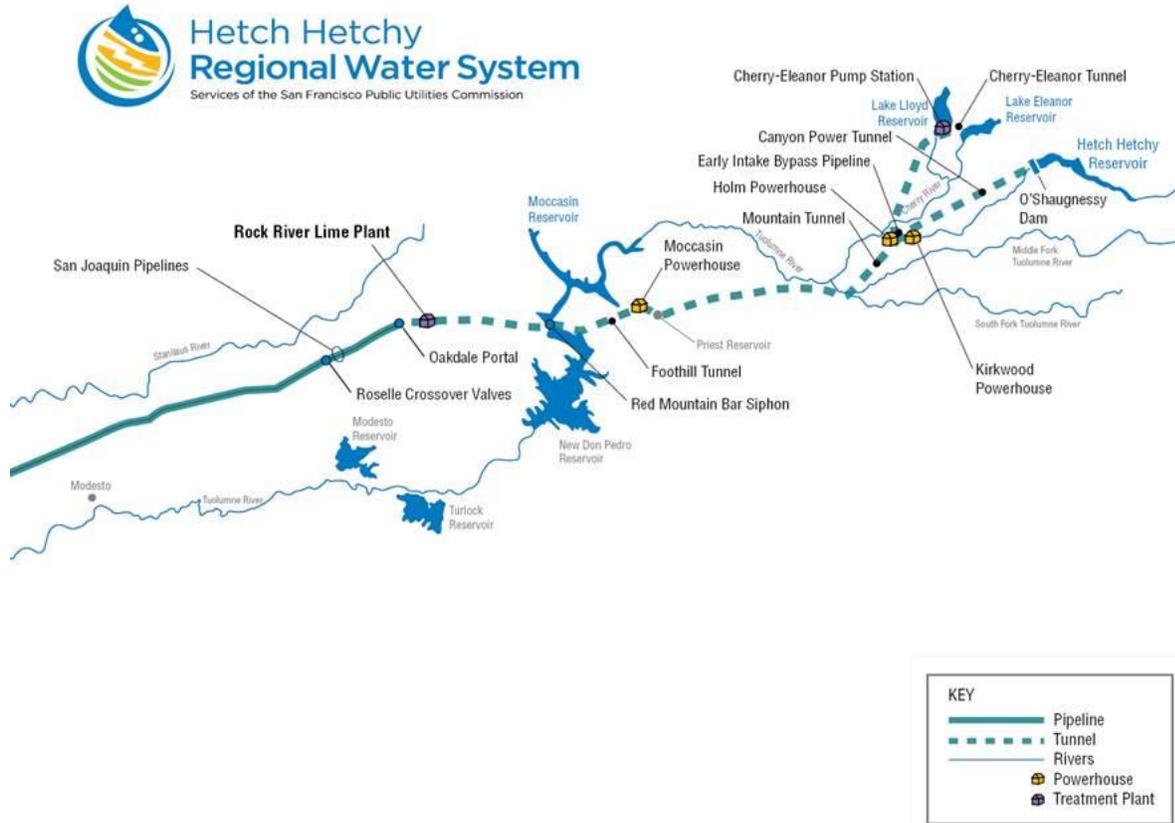
The outcome of this assessment is as follows:

- Mountain Tunnel and Penstocks Rehabilitation projects are considered to be a vital component to the overall function of the Hetch Hetchy Power System;
- Sustainalytics reviewed the relevant project documents and had conversations with relevant SFPUC team members to confirm the low environmental impact of the Mountain Tunnel project;
- The reallocation of Green Bond proceeds to the Mountain Tunnel and Penstock Rehabilitation Projects, from generator repair, helps to achieve the same objective of enabling the Hetch Hetchy Power system to continue to produce renewable energy, free of GHG emissions;
- It is reasonable to conclude that the Mountain Tunnel and Penstock Rehabilitation Projects are in line with the description of "Green Projects" in the Official Statement and that proceeds can therefore be allocated to its rehabilitation.

Conclusion: Based on our assessment of SFPUC's description of "Green Projects" in its Official Statement 2015, and on a review of the environmental impacts of both the Mountain Tunnel and the Penstock Rehabilitation Projects, Sustainalytics has concluded that the reallocation of Green Bond proceeds from their originally planned use to the Mountain Tunnel Rehabilitation Project and the Penstock Rehabilitation Projects are in line with the intended impact of the Series A Power Revenue Bonds and will enable investors to fund environmentally beneficial projects.

It should be noted that the Green Bond Principles 2015 state that "the cornerstone of a Green Bond is the utilization of the proceeds of the bond which should be appropriately described in the legal documentation for the security". Full alignment with the Green Bond Principles 2015 would mean allocating proceeds to projects in the categories explicitly described in the Official Statement 2015. Nonetheless, the reallocation is, as stated above, in line with the intended impact of the use of proceeds.

Appendix 1: Map of Hetch Hetchy Regional Water System



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