

OneWaterSF

Adapting Together:
Five Years of **OneWaterSF**

April 2022



San Francisco
Water Power Sewer
Services of the San Francisco Public Utilities Commission



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A Letter from the General Manager of the SFPUC, Dennis J. Herrera

True to our mission, the San Francisco Public Utilities Commission (SFPUC) has been widely recognized as a leader in providing reliable water, wastewater and power services to our customers. We have also been celebrated for our innovative projects, programs, and initiatives that help us better serve our communities, take care of our environment, and more efficiently use financial resources. We have been at the forefront of cutting-edge work in areas such as water reuse, where our Onsite Water Reuse Program will save nearly 38 million gallons of water annually, and biosolids development, where our Biosolids Program recycles nutrients from wastewater into high-quality fertilizer that improves California's farm soils. And we continue to deliver 100% greenhouse gas-free electricity to municipal, residential, and commercial customers through Hetch Hetchy Power, our publicly owned retail electric utility, and CleanPowerSF, which provides cleaner energy at competitive rates to City electricity customers. OneWaterSF has been essential to fueling this innovation. An approach to resource management, OneWaterSF helps us identify new and creative ways of approaching challenges and managing our resources so that we can provide better outcomes for our customers and the environment.

Much has changed since OneWaterSF was formalized over five years ago. The world looks and feels different – the effects of climate change, such as drought and wildfires, continue to become more pressing, regulatory changes and uncertainties create new challenges to resource management and service delivery, and issues such as affordability, equity, and workforce development require us to take a more holistic view of our work. And, of course, the global pandemic has changed many aspects of how we live and work and has underscored

the imperative of issues such as affordability and equity. This year's brochure theme, Adapting Together, recognizes these changes and showcases how OneWaterSF has helped us adapt by expanding our view of resources. This means not just including water and energy resources, but also seeing resources in data and information, our people and human capital, and finance and funding. By taking this broad view, we continue to transform how we work so that we can deliver environmental, economic, and social benefit to our customers and the environment in which we work and live.

As we move toward the future, the SFPUC will continue to leverage the collective insight of our talented and dedicated employees along with our community partners through collaboration and creative thinking. There is a tremendous amount of challenging and exciting work to be done, and by Adapting Together, we can chart a new course for delivering innovative solutions to better manage our finite resources and optimize our operations, prepare for the future, and create more equitable outcomes to benefit all the communities we serve.



A handwritten signature in black ink that reads "D.J. Herrera". The signature is fluid and cursive, written on a white background.

DENNIS J. HERRERA





Tuolumne Meadows

Visioning OneWaterSF

OneWaterSF is a framework for how we approach our work at the SFPUC. Fundamental to this approach is the recognition that we are most successful when we work together to look beyond the easy or obvious solution. Our push to synthesize insights from multiple perspectives helps us explore new ways of doing things so that we can accelerate the application of new ideas to tomorrow's challenges.

The OneWaterSF Vision and Guiding Principles were first published in 2016 to serve as the foundation for developing and implementing projects and programs that advance the OneWaterSF approach. Since that time, OneWaterSF has grown organically through a cultural commitment of our staff to form partnerships across traditional boundaries within the organization. This organic growth has resulted in an evolution of how OneWaterSF is being applied. We're now seeing OneWaterSF apply more broadly and in a manner that elevates community and social issues. We are also seeing OneWaterSF take on an expanded definition of resources to include not only water and energy resources, but also our financial resources, technology resources, human resources, and community partnerships.

This evolution of OneWaterSF has given us the opportunity to refresh our Vision and Guiding Principles to be more reflective of the ways in which we see OneWaterSF being applied today. With this refresh, the Vision and Guiding Principles will continue to serve as the foundation for developing and implementing projects and programs that advance OneWaterSF but do so in a way that fosters its ongoing expansion.

OneWaterSF Vision

With the OneWaterSF approach, the SFPUC will optimize our resources to create a more resilient future that balances community and ecosystem needs.

OneWaterSF Guiding Principles

- 1 Practice a culture of collaboration.** Work across traditional boundaries to foster collaboration that results in the efficient use of our resources.
- 2 Connect with a community of partners.** Elevate and sustain partnerships with our communities to engage and exchange ideas that result in better stewardship of our resources.
- 3 Pursue multiple benefits.** Identify approaches and solutions across our enterprises and operations that provide benefit to multiple resource areas.
- 4 Expand the culture of innovation.** Encourage new ideas and partnerships that test creative business practices, pilot state-of-the-art technologies, and discover inventive solutions.
- 5 Match the right resource to the right use.** Reimagine what resources are available to serve our customers in the most sustainable and reliable way.
- 6 Plan for future uncertainties.** Build flexibility into our work so that the SFPUC can be resilient to a wide variety of situations, responsive to challenges, and adapt to future conditions.
- 7 Advance healthy communities.** Ensure affordable and reliable services in the communities we serve and promote the equitable distribution of both benefits and impacts of our operations, programs and policies.
- 8 Support balanced ecosystems.** Consider ways in which our work can better conserve resources and support ecosystems, including air quality and the health and quality of watersheds, San Francisco Bay, and the Pacific Ocean.

Recognizing Success

We have seen OneWaterSF evolve over the last five years to capture benefits in more areas and aspects of our work. We have heard stories from all across the SFPUC about the new and exciting ways that OneWaterSF is being applied – from management of water and power to developing our current and future workforce to partnering with our communities. Documenting and sharing these accomplishments is an important aspect of highlighting the variety of ways in which OneWaterSF is being applied across the SFPUC. Recognizing the different positive outcomes of OneWaterSF reinforces the importance of collaboration and working across traditional silos which allows us to provide benefits for our customers, the communities we serve, and the environment.



The **Green Infrastructure Grant Program** has provided **\$7.9 million** to **schools, parks, and churches** to transform **over 10 acres** of impervious areas in San Francisco



Since the Onsite Water Reuse Grant Program launched, the SFPUC has awarded **\$2.25 MILLION**, which will result in nearly **38 MILLION GALLONS** of **WATER SAVED** ANNUALLY



Deployed automated water meter technology estimated to save **54 MILLION GALLONS PER YEAR** by notifying customers about leaks

Advanced Metering **INFRASTRUCTURE** **HELPS CUSTOMERS** understand use patterns and **CONSERVE ENERGY**



The Sunol Native Plant Nursery **PROTECTS OUR WATERSHEDS** by growing more than **25,000 plants** from **85 seed species** for restoration projects



In response to COVID, the SFPUC established the Emergency Residential **Community Assistance Program**, which helped **5,377 customers** pay their utility bills





In 2021, the **Wastewater Enterprise Training and Education Center** created **28 NEW TECHNICAL TRAINING & EDUCATIONAL VIDEOS** for staff

SFPUC biosolids fertilize local farms and sequestered

7,666

METRIC TONS OF CO₂ in 2021, which is equivalent to **removing more than 1,500 cars** from the road



Recognized by State regulators for our role in developing & implementing **wastewater monitoring** to **MANAGE THE SPREAD OF COVID**



Received the **Brave Blue World Foundation's Lighthouse Award** which honors **PIONEERS & VISIONARIES** in the water sector



Since 1996, SFPUC has welcomed **950 Project Pull interns** from over **55 high schools and colleges** to gain valuable **on-the-job training**



The SFPUC is making **infrasrastructure investments today** that include climate mitigation & adaptation **elements for the future**



Completed **387 green infrastructure projects** that capture & manage

220 MILLION GALLONS

of stormwater in San Francisco each year



CleanPowerSF

has committed enough new **wind and solar projects** in California to power the equivalent of more than **430,000 San Francisco homes**

San Franciscans use roughly **42 gallons of water** per person, per day,



HALF the statewide average

Adapting Together

Resiliency is a cornerstone of the OneWaterSF vision and collaboration is a fundamental element of the OneWaterSF approach. The new realities brought on by climate change – such as drought, wildfires, and more severe storm and flooding events – will require us to change how we manage our resources and operate our systems. Old approaches that worked in the past will need to be reevaluated and modified to fit the realities we face today and the challenges we will face in the future.

This year's brochure celebrates five years of OneWaterSF by showcasing initiatives that demonstrate how we are Adapting Together as an organization. The initiatives highlight work that is being done now to make us more resilient in the future. These initiatives show how collaboration and innovative thinking advance new ideas and technologies to form practical and sustainable solutions. It takes the collective effort of our customers, employees, and community members to implement new ideas and programs. And by Adapting Together, we can change the ways in which we collectively manage all of our resources to prepare for a sustainable future.



Children at The Butterfly Garden



Adapting Together

Anchor Brewing Company Water Reuse Project

California is no stranger to water shortages. Over the past 100 years, the SFPUC has built and maintained a water system that reliably provides drinking water to over 2.7 million Bay Area residents. But the impacts of climate change – such as changing precipitation patterns and longer, more severe droughts – are challenging us to rethink the way we view our water supplies. We are already seeing how water shortages are placing more pressure on existing systems to reliably deliver water to local communities and businesses. We have a responsibility to continue innovating in how we think about and use water. To meet this responsibility, OneWaterSF encourages us to take an approach that optimizes the use of our resources to create a more resilient future. By looking at these water challenges through a OneWaterSF lens, we can see how to solve these problems through innovative technology and partnerships with local businesses.

One example of this kind of innovative and collaborative problem-solving is through a partnership between the SFPUC and Anchor Brewing Company. As San Francisco’s oldest operating brewery, Anchor Brewing has produced its flagship “Anchor Steam” beer since 1896. But brewing beer is inherently water intensive: producing one 12-ounce can of beer can take a half gallon of water, meaning that 6 cans of water are needed to produce 1 can of beer. Much of this water is what’s known as “process water,” and is used for rinsing bottles and cleaning equipment. Typically, this water is sent down the drain, but water recycling technology can be implemented onsite to collect and treat this process water for reuse.

Reuse facilities at Anchor Brewing





SFPUC staff, Mayor London Breed, activist Edward Norton, and SFPUC Commissioner Newsha Ajami at the Anchor Brewing project celebration.

In 2018, the SFPUC established a water recycling program specifically for breweries. This included developing guidance for breweries, including requirements for source water characterization, source control, treatment, and ongoing monitoring to ensure the water is safe for the intended uses. Additional support was provided in the form of a \$1 million grant through the Onsite Water Reuse Grant Program. With construction now complete, Anchor operates San Francisco's largest commercial water reuse facility. The water reuse facility at Anchor works by treating the water biologically first, introducing bacteria to break down the sugars and starches in the water. Then, the water is filtered, sent through a reverse osmosis system and disinfected with ultraviolet light.

The new water reuse system will treat 100 percent of process water at Anchor Brewing, with a capacity to recycle up to 20 million gallons of water annually – the yearly equivalent of roughly 1,300 San Francisco residents. With this first project complete, the SFPUC hopes to partner with additional breweries and expand the brewery recycling program even further, broadening use of the technology and saving even more water.



Aerial view of Balboa Reservoir site: Photo courtesy of GLS Landscape Architects

Adapting Together

Balboa Reservoir Redevelopment

OneWaterSF challenges us to reimagine how we view resources – not just how we define a resource but also the ways in which we can use that resource to provide multiple benefits to our communities, ratepayers, and our environment. One such example of this in action is the Balboa Reservoir project, a public-private partnership effort with a number San Francisco City departments to develop a 17-acre parcel located adjacent to the City College of San Francisco (CCSF). This project will transform a city-owned parking lot into a vibrant new community affordable to a wide range of residents.

All aspects of the redevelopment project are guided by the principles of the San Francisco Sustainable Neighborhood Framework. This Framework, which complements some of the OneWaterSF Guiding Principles, provides a comprehensive approach to amplifying environmental performance, quality of life, and community co-benefits. Sustainability and resiliency, a cornerstone of OneWaterSF, is integrated into water and power aspects throughout the project. Rooftops will maximize the use of solar systems in support of its set goal of meeting building energy demand through primarily using greenhouse gas-free

electricity sources. The SFPUC will also deliver 100% greenhouse gas free electricity through Hetch Hetchy Power. In addition, the project aims to achieve net-zero greenhouse gas emissions during construction and operations of the project. This project will also adhere to requirements outlined in the SFPUC's Onsite Water Reuse Program by reusing graywater for onsite toilet flushing and irrigation.

Housing and open space are two other key components of the Balboa Reservoir Redevelopment Project. Of the 1,100 new housing units, 550 will be below market rate available to low- and moderate-income households. Up to 150 of these below market rate units will be dedicated for educator households, including educators from CCSF. A 2-acre central park will serve as the center of the new community, while an SFPUC parcel will be used as a separate 1-acre park. Both areas will include large green spaces and play areas. Pedestrian greenways will promote walking to adjacent neighborhoods, including strong connections with CCSF and the Sunnyside and Ingleside neighborhoods. By re-envisioning uses for this city-owned land, this project embodies how taking a OneWaterSF approach can yield innovative solutions that provide multiple benefits around transportation, open space, and sustainability.

Balboa Redevelopment Project rendering



Photos courtesy of GLS Landscape Architects

Community meeting on Balboa Redevelopment Project



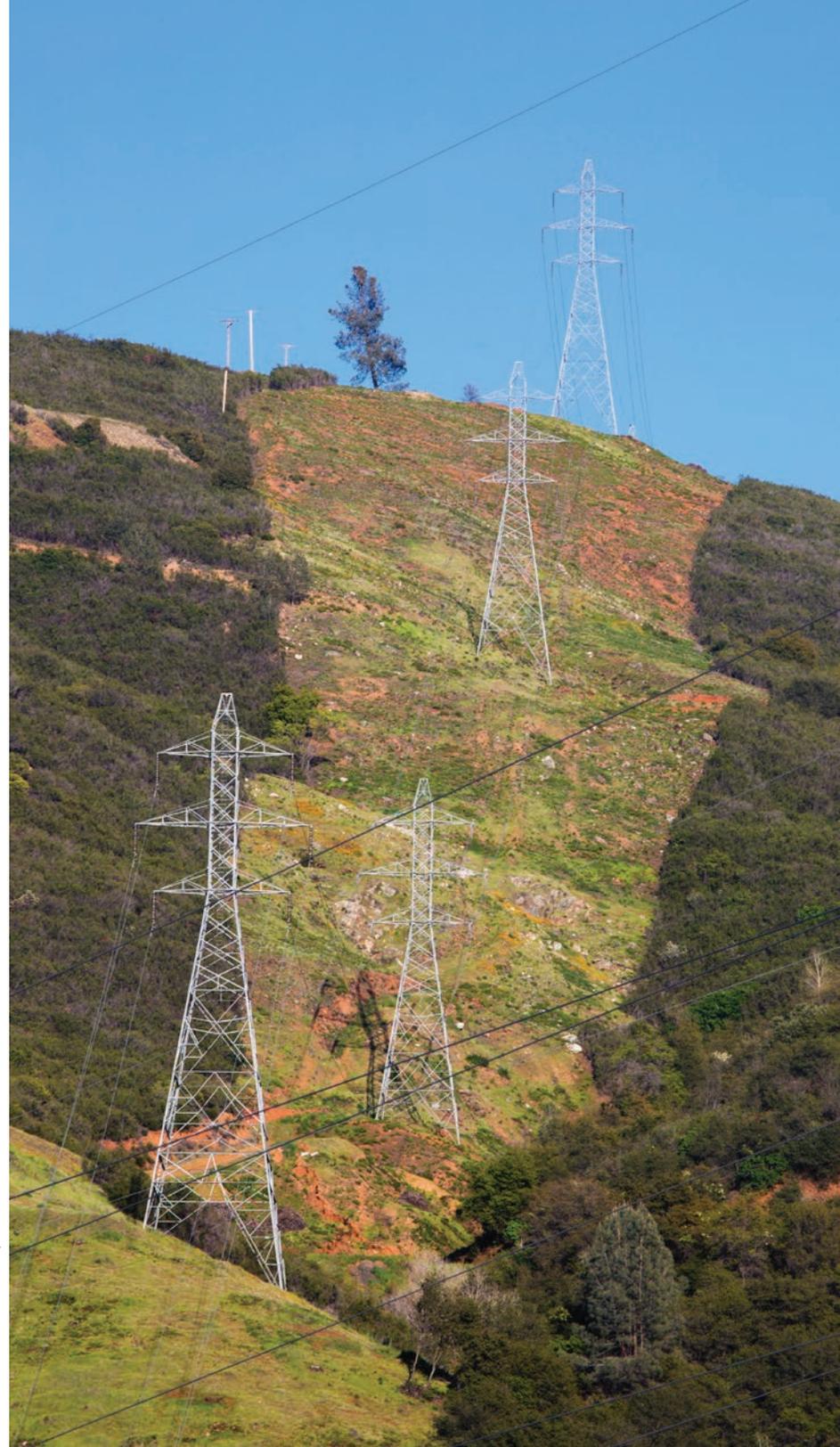
Adapting Together

Applying Technology Solutions to Understand and Mitigate Wildfire Risks

While wildfire has always been a part of California's landscape, it is becoming an ever-increasing risk as climate change worsens. The 2013 Rim Fire, at the time California's second-largest wildfire, ultimately burned over 250,000 acres and came within a mile of Hetch Hetchy Reservoir. In 2020, the Moc Fire forced evacuation of the Moccasin Reservoir hydroelectric facility and the Tiltill Fire burned north of Hetch Hetchy in 2021. Not only do wildfires present a health and safety risk to communities that are in their path, they also directly threaten SFPUC assets, such as power lines and hydroelectric facilities, and can impact the health of our watersheds and the quality of water stored in our reservoirs. OneWaterSF encourages us to think outside the box to proactively address wildfire risk; it promotes creative thinking about how we can leverage partnerships, use innovative ideas, and benefit from state-of-the-art technology.

The SFPUC is utilizing new technologies such as mapping tools and innovative modeling software to mitigate wildfire-related risks. Satellite vegetation mapping tools allow us to analyze satellite data to understand where vegetation encroaches on our electric utility facilities. We identify areas where vegetation and/or tree removal projects are most beneficial for protecting SFPUC assets. Armed with this information, we can proactively manage and protect our facilities by prioritizing projects, including areas with the potential for large fire spread near communities.

Transmission power lines in local watershed



Modeling data helps the SFPUC determine when and where overhead lines should be de-energized for safety and provide visuals for education and public awareness. In addition, wildfire simulation software helps us predict wildfire behavior and spread to apply real-time modeling results when a fire has already started; it helps us communicate the potential risks to our facilities to those on the ground fighting the fire. This software integrates real-time weather with advanced modeling to calculate where a fire is going, when it will reach critical locations, and what potential impacts there may be.

The data produced through these tools and technologies translates into practical actions that the SFPUC is taking to mitigate the risks posed by wildfires. This information and these actions also assist other partners, such as State and Federal agencies, in their wildfire management and firefighting activities and encourage a coordinated response to future wildfire events. The SFPUC further collaborates with various partners through our membership in the Southwest Interface Team (SWIFT), a group comprised of multiple state and local government entities, to create fire-adapted communities.

Local distribution power line near burn area

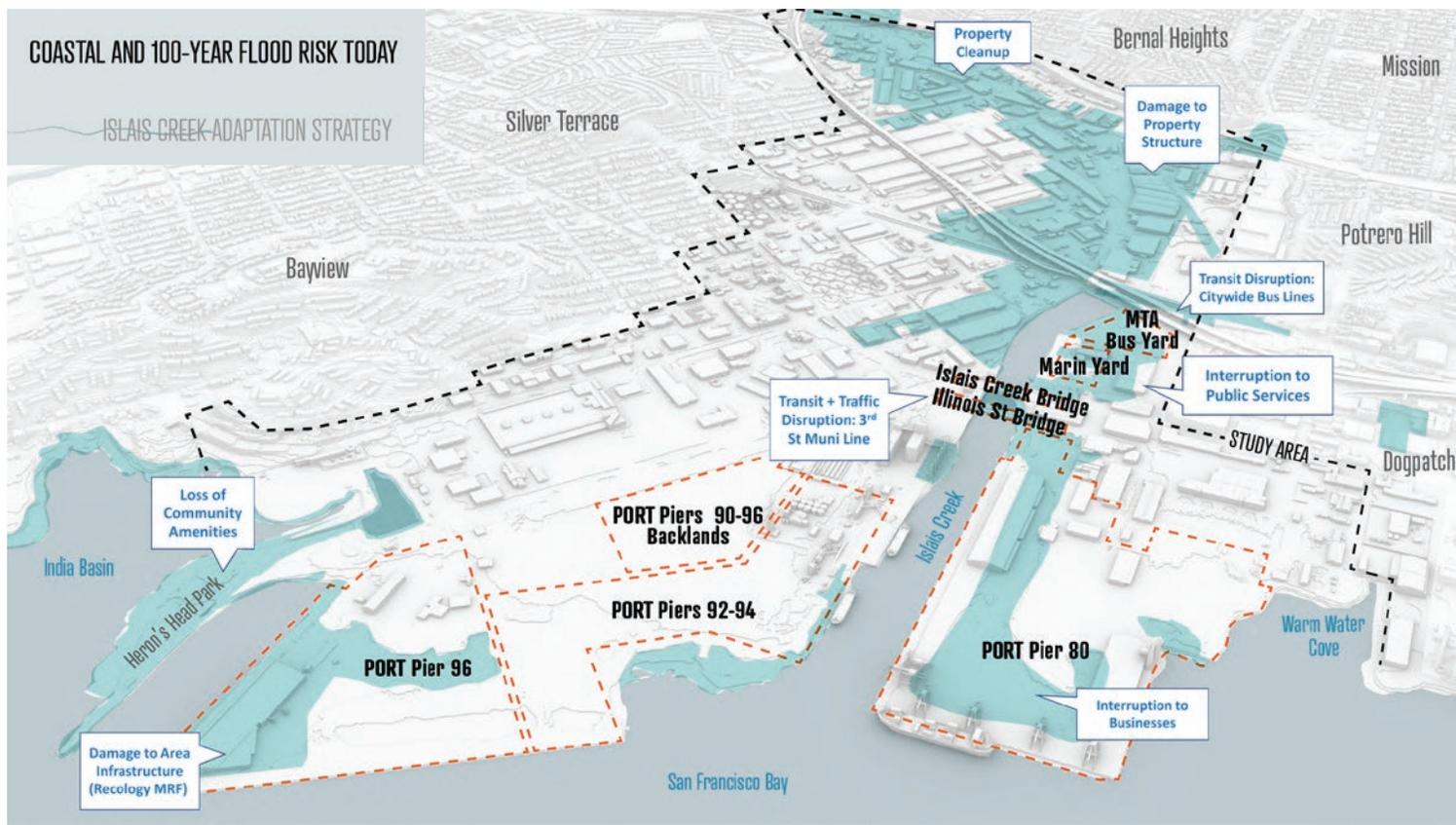


Adapting Together

Joint Benefits Authority

San Francisco has a long history of working to deliver affordable, equitable, and quality public services. There are many challenges to meeting this goal, including the natural silos of City departments; the rising cost of construction; the lack of consistent funding for ongoing maintenance; and the struggle to align work among City agencies with different projects in the same area. Simultaneously, we face growing impacts from climate change that disproportionately impact the most vulnerable communities. OneWaterSF helps us continue to deliver on the City's public service goal while tackling these challenges by turning to our core guiding principles of practicing a culture of collaboration, connecting with partners, and pursuing multiple benefits to advance healthy communities.

An example of where we see this work happening is the SFPUC's new partnership with the World Resources Institute, Encourage Capital, and The Liquid Assets Project to design and pilot a Joint Benefits Authority (JBA). The JBA will bring

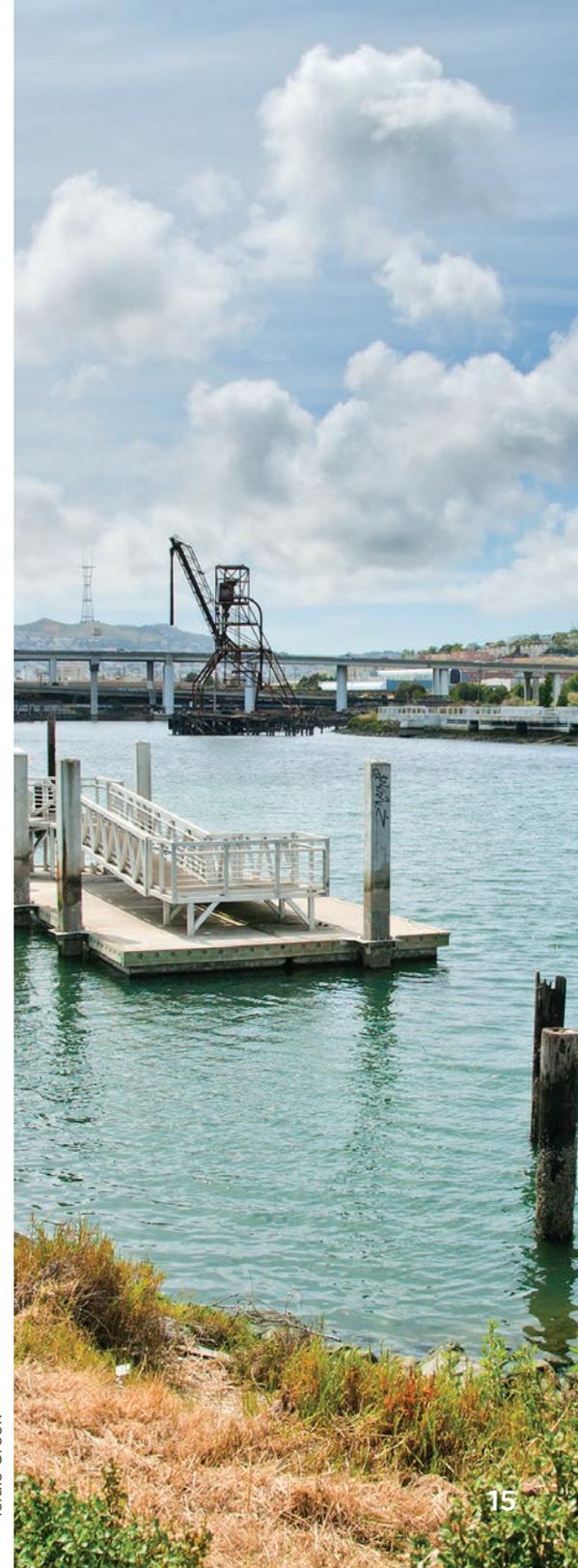


together multiple City departments, in partnership with the community, to deliver cost effective infrastructure that addresses climate uncertainty with adaptable nature-based infrastructure solutions at the neighborhood scale.

Through the JBA, projects can be jointly planned, financed, delivered, and operated through a City and community partnership. By aligning goals at the start of a project through advanced capital planning, the City and community can implement projects that achieve multiple objectives. The JBA aims to improve project delivery and investment in the following ways:

- One Team: Creating one project team for neighborhood scale adaptation projects, reducing overlap and clarifying roles
- Resource Efficiency: Aligning departments' priorities and community needs, and pooling the limited City resources to expand services and address neighborhoods at risk
- Integrated Solutions: Expanding project goals brings new project partners and funding with multipurpose, multi-benefit projects
- Bonding Power: Serving as a finance vehicle with the power to issue bonds
- Long-Term Stewardship: Addressing climate uncertainty with adaptable nature-based infrastructure solutions at the neighborhood scale

SFPUC is exploring a multi-agency collaboration with the Port of San Francisco, the San Francisco Municipal Transportation Authority, and San Francisco Planning to pilot the JBA in the southeast waterfront along Islais Creek. The pilot JBA would deliver a set of adaptation projects to protect the Islais Creek shoreline and the surrounding area from flooding and sea level rise through 2100, and showcase how we can collaborate on important projects that help us adapt together.



Islais Creek

Adapting Together

Treasure and Yerba Buena Islands Redevelopment

Yerba Buena Island and Treasure Island have a rich history in the Bay Area. Encompassing just shy of 1 square mile, the two islands were a critical part of United States military operations until 2007 when the United States Navy granted authority of the Islands to the City of San Francisco. In 2011, the City approved a 20-year development plan for the Islands which marked a major shift in the long-term vision of how the land of Yerba Buena and Treasure Islands could be used.

The redevelopment, once complete, will result in 405 acres of land transformed with new homes, transportation connections, parks and open space, public art, shops, and restaurants. The project includes constructing 8,000 new units of housing, some of which are just now completing construction and will soon be ready for residents. Of the new housing developments, 27% of units will be below market rate, creating 2,173 affordable homes, 20% of which will be reserved for formerly homeless households and veterans. The transportation network will prioritize pedestrians and cyclists and encourage transit-oriented choices as part of everyday life.



Power infrastructure being installed on Yerba Buena Island

Aerial of completed power yard on Yerba Buena Island



In partnership with other agencies and non-profits overseeing the implementation of the redevelopment plan, the SFPUC is implementing projects that will support utility resiliency and reliability on Yerba Buena Island and Treasure Island. Critical to this work are projects being implemented by the Power Enterprise to serve the communities with 100% greenhouse gas-free Hetch Hetchy Power.

As part of the initial phase of redevelopment, the Power Enterprise recently energized the new main electric circuit on Yerba Buena Island, marking a significant milestone in the area's redevelopment. This circuit will energize three new SFPUC owned and operated water facilities that will provide service to both Yerba Buena Island and Treasure Island. This work is a key element of revitalizing the Treasure Island and Yerba Buena Island communities by rebuilding the infrastructure to increase both power and water service resiliency.

By working with redevelopment partners and across City agencies, the SFPUC is collaborating to develop infrastructure that will provide this new development scalable, clean and reliable power and water service. Reaching this key power milestone is a prime example of what can happen when we work together to implement projects that respond to the current and future needs of our community.



Moving Forward

The cornerstone of OneWaterSF is our vision of creating a more resilient and reliable water and energy future. As we look to meet this vision, we understand that there are many critical challenges to overcome. But we are also continually inspired by new opportunities for utilizing and managing our finite water and energy resources. These opportunities are only uncovered and implemented through the kind of creative, collaborative thinking that is fostered through OneWaterSF. This thinking can originate from many different places; SFPUC staff, academia, private sector, and an engaged community all provide unique perspectives that expand traditional thinking.

We also acknowledge that reliable, affordable, and equitable access to water and power is the cornerstone of a healthy and economically strong community. OneWaterSF helps us deliver on this obligation by recognizing that the challenges we face go beyond traditional water and energy issues but stretch across many disciplines, including hiring and retaining the best employees and leveraging the strength of our communities in a meaningful way. Through the OneWaterSF framework, we are better equipped to collaborate and leverage the wide-ranging expertise of our staff and community partners so that we can better serve our customers and ensure that benefits are shared across all communities.

From the beginning, OneWaterSF's strength has come from the focus on innovation and collaboration to remove barriers to progress. This multi-disciplinary approach allows us to not only test new ideas and technologies but to expand their application so that we find practical and sustainable solutions that change the ways in which we manage our resources. It's through this approach that we will adapt together and ensure the resiliency of our water and energy resources for current and future generations.



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