Welcome to the San Francisco Public Utilities Commission’s Sewer System Improvement Program’s FY19-20 Annual Report.

The purpose of this report is to provide a recap of the Program’s projects and accomplishments, identify resources for obtaining more information, and preview next year’s activities. You will also learn about our community benefit activities and workforce development achievements. This edition covers January 2019 - June 2020, future editions will align with the fiscal year.

The SSIP Is Breaking Ground & Making Strides

The Sewer System Improvement Program (SSIP) is a major component of the City of San Francisco’s comprehensive approach to addressing the issues of: Aging Infrastructure, Seismic Vulnerability, Climate Change and Stormwater Management, Water Quality, and Responsible Resource Recovery by incorporating new technologies to improve our communities and quality of life. We are now several years into the multi-billion-dollar, citywide Program, investing in a modern, reliable, and sustainable system to protect public health and the environment for now and generations to come.

2019 was a year that saw internal and external transitions - we welcomed our new Director, Stephen Robinson. We saw the completion of five essential projects: Southeast Treatment Plant (SEP) Oxygen Generation Plant, SEP Existing Digester Gas Handling Improvements, Oceanside Treatment Plant (OSP) Odor Control Optimization, Marin Street Sewer Replacement, and Sunnydale Green Infrastructure. Major construction continued at the Southeast Treatment Plant, as construction began on several of the largest projects within the program, SEP Biosolids Digester Facilities Project, SEP New Headworks (Grit) Replacement - Scope III: Main Headworks, SEP Seismic Reliability and Condition Assessment Improvements. In the early days of 2020, the global pandemic required us to adjust and adapt to ensure the health and safety of our staff, partners and the community. The SFPUC implemented Work-from-Home procedures to support staff and emergency customer bill assistance programs to support our customers and ratepayers. We also implemented strict COVID-19 safety measures for staff and contractors working on our essential projects. We are committed to ensuring a safe environment for our teams to deliver our critical work.

This 2019-2020 annual report provides a review of our efforts and recent accomplishments, and a look ahead to the year to come as we continue to invest in our critical facilities, the people who build and run them, and the communities in which they’re located.
The Sewer System Improvement Program (SSIP) is charged with implementing efficient, high quality, and reliable wastewater projects that directly support our quality of life. We operate our wastewater system 24 hours a day, 7 days a week, 365 days a year, in a manner that is inclusive of environmental and community interests, and that sustains the resources entrusted to our care. The Wastewater Enterprise operates and maintains more than 1,000 miles of sewers, 25,000 storm drains, and three treatment facilities, the oldest and largest all-weather facility of which was built in 1952—the Southeast Treatment Plant. The SSIP supplements our Renewal and Replacement Program by making significant capital investments to upgrade and modernize our aging system to ensure a resilient, reliable, and sustainable system now and for generations to come.

Programmatic Overview

Mariposa Pump Station Improvements Project: Installing wall formwork on pump station.

San Francisco’s Challenges and SSIP Levels of Service (LOS)

Committed to a Measurable, Results-Driven Approach

The SSIP uses specific, measurable factors, known as Levels of Service (LOS), to prioritize projects and evaluate Program success as we address current and future challenges. The LOS goals ensure that the projects not only meet our technical needs but work to balance social, environmental, and financial factors, while managing program and project-level risk.

Levels of Service (LOS) Guide our Work:

- Provide a Reliable and Resilient System that can Respond to Catastrophic Events. Ensuring treatment of flows within 72 hours of a major earthquake.
- Integrate Green and Grey Infrastructure to Manage Stormwater and Minimize Flooding. Reducing stormwater impacts on neighborhoods and the sewer system.
- Provide Benefits to Impacted Communities. Alleviating odors and other impacts while providing both economic and job opportunities.
- Modify the System to Adapt to Climate Change. Building facilities with climate change design criteria to respond more effectively to the rising sea level and other impacts.
- Achieve Economic and Environmental Sustainability. Reusing and conserving the by-products of our wastewater and stormwater treatment systems.
- Maintain Ratepayer Affordability. Keeping customer bills less than 2.5% of an average household income for a single-family residence.

Graduation ceremony for the Neurodiversity Pilot Program’s first cohort – which provided people on the autism spectrum or with other developmental disabilities access to job training and career opportunities.

Successfully converted our biosolids into a marketable, renewable fertilizer, which is now being sold to local farms.
Performance Metrics

The scope, schedules, and budgets of SSIP’s baseline were revised in April 2018. SSIP management will undertake this exercise approximately every two years coincidental with our budget cycle to refine scope needs and establish more accurate schedule and budget forecasts. We are making significant progress across the active SSIP projects, including the first phase of 70 projects launched at the start of the Program and additional projects initiated in 2018. We have developed a long-term adaptive planning process to regularly evaluate and prioritize future projects as part of the rolling two-year budget and 10-year capital planning cycles. Below are metrics that demonstrate progress across the Program. More detailed information can be found in our Quarterly Reports.

Project Count by Phase

Planning $26m (3 Projects)
Design $299m (7 Projects)
Bid & Award $188m (5 Projects)
Construction $2,082m (17 Projects)
Close-Out $59m (6 Projects)
Completed $324m (32 Projects)

TOTAL $2,979B (70 Projects)

Total Budget Spent
Budget: $2.261B
Spent: $1.086B

SSIP Phase 1 Completion 46%

All data is through June 2020

Investing in our Communities while Building our Projects

By exceeding the City’s local hiring requirements with our infrastructure investments, the SFPUC is contributing to San Francisco’s ongoing economic vitality by strengthening its neighborhoods, businesses, and workforce through:

JOBS: Our projects are covered by the San Francisco Local Hiring Policy for Construction and have a local (San Francisco resident) worker participation requirement of 30%. For apprenticeships, or entry-level workers, the requirement is 50%. The following numbers are estimates based on Certified Payroll Records submitted by contractors.

LOCAL HOURS: San Francisco residents have worked more than 279,000 of the total 510,000 craft hours on SSIP projects. This equates to 33% of the total hours, exceeding the Local Hire requirements of 20-30% depending on the contract advertisement date. San Francisco apprentices have worked nearly 50,000 hours, which accounts for 63% of all apprentice hours worked on SSIP, and exceeds the 50% local apprentice requirement.

CONTRACTS: The City also has a mandate for local community contractors to participate. Although the goals vary per contract, the SFPUC is committed to maximizing local participation on every project. On SSIP projects, LBE prime and sub-contractors have been awarded more than $223 million, which is more than one out of every four dollars awarded on SSIP projects.

* The Office of Economic and Workforce Development (OEWD) makes the final determination on each individual project’s Local Hire compliance requirements. These numbers do not reflect any adjustments or other factors OEWD may require.

Percentage of hours worked (required vs. actual)

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<thead>
<tr>
<th></th>
<th>Goal</th>
<th>Actual</th>
</tr>
</thead>
<tbody>
<tr>
<td>All San Francisco Residents</td>
<td>30%</td>
<td>33%</td>
</tr>
<tr>
<td>San Francisco Apprentices</td>
<td>50%</td>
<td>63%</td>
</tr>
</tbody>
</table>

All data is through June 2020
Projects

COLLECTION SYSTEM PROJECTS
- Large Sewers, Tunnels, and Odor Control
- Pump Stations and Force Main Improvements
- Flood Resilience Projects
- Combined Sewer Discharge Structures and Transport/Storage Boxes

GREEN INFRASTRUCTURE & EARLY IMPLEMENTATION PROJECTS
- Baker Beach Green Streets
- Sunset Boulevard Greenway
- Holloway Green Street
- Visitacion Valley Green Nodes
- Mission and Valencia Streets Green Gateway
- Upper Yosemite Creek Daylighting
- Wiggle Neighborhood Green Corridor
- Chinatown Living Alley

INTERDEPARTMENTAL PROJECTS
- Van Ness Improvement Project
- Geary Rapid Project
- Central Subway Improvements
- Masonic Avenue Streetscape Project
- Better Market Street Project
- Mission Bay Loop
- L Taraval Improvement Project

LEGEND
- Treatment Facilities
- Deep Water Outfalls
- Transport/Storage Structures
- Tunnels
- Force Mains
- Interceptors & Tunnels
- Green Infrastructure
- Watershed Boundary

Squares indicate Completed Projects as of June 2020
Map and project areas not to scale

- Structural and seismic improvements
- Westside Pump Station reliability improvements

NORTH POINT WET-WEATHER FACILITY
- Upgrade operational reliability and efficiency

SOUTHEAST TREATMENT PLANT
- Build new biosolids digesters facilities
- Replace headworks facility
- Improvements for odor control
- Enhance visual aspects
- Structural, seismic improvements, and treatment process
Treatment

Our SSIP treatment plant projects will bring our facilities up to seismic standards, improve efficiency, enhance reliability, and prepare us for the challenges that we’re already experiencing with climate change and sea level rise. These efforts not only help to maintain our quality of life but strengthen our communities and our economy.

Southeast Treatment Plant

We are investing over $2 Billion to transform San Francisco’s largest all-weather treatment plant into a state-of-the-art resource recovery facility that is a source of pride for our staff, our ratepayers, and all who live, work, and visit San Francisco.

During this period, we finalized a new US EPA Water Infrastructure Finance and Innovation Act (WIFIA) loan of $525 million for the Southeast Treatment Plant Improvements Project and refinanced the Biosolids Digester Facilities Project $699 million WIFIA loan agreement to reduce interest rate from 3.09% to 1.84%. Combined, these efforts will save millions in interest payments for our ratepayers.

Our SSIP treatment plant projects will bring our facilities up to seismic standards, improve efficiency, enhance reliability, and prepare us for the challenges that we’re already experiencing with climate change and sea level rise. These efforts not only help to maintain our quality of life but strengthen our communities and our economy.

New Headworks Facility Project

One of our two largest projects, the New Headworks Facility Project, completed demolition of the aging facility and began preparations for the new building. The Headworks project is arguably the most complex in the SSIP since the facility must remain in operation during construction, which will also occupy the same footprint. When complete, the project will include a large gateway public art installation enhancing the experience for those living or traveling through the neighborhood.

Biosolids Digester Facilities Project

The largest project of the entire Program, the Biosolids Digester Facilities Project (BDFP), is a top priority for the SFPUC. When this project is complete, we will have made major strides in converting the SEP into a true resource recovery facility by implementing sustainable reuse of several components of the wastewater stream, including reuse of the biogas from the digestion process, a substantial increase in use of recycled water, and a higher class of biosolids will be produced with expanded beneficial reuse opportunities. The project will also utilize modern odor control technology and address earthquake and climate change risks. Additionally, the digesters will be moved farther away from residents and incorporate major visual and architecture improvements. The new solids treatment system will ensure treatment reliability, maintain regulatory compliance, and protect public health and the environment.

Over the past year the BDFP achieved several major milestones including start of construction, demolition of existing infrastructure and began an intense effort to reduce costs and incorporate new design elements to improve project delivery while retaining our commitment to community and operational Levels of Service.
Oceanside Treatment Plant
The Oceanside Treatment Plant (OSP) and Westside Pump Station (WSS) wastewater treatment facilities are located next to the San Francisco Zoo and treat 20% of the City’s wastewater.

The investments at OSP and WSS will ensure efficient operation, improve operational safety and seismic reliability, maintain permit compliance and ensure these facilities continue to protect public health and the environment. During this period, the OSP Digester Gas Utilization Upgrades Project was approved for grant-funding from the California State Water Resources Control Board, Clean Water State-Revolving-Funding (SRF), and complies with grant requirements including American Iron and Steel (AIS). The project will replace and upgrade the existing outdated biogas energy recovery system at OSP. Biogas, the natural byproduct from the wastewater treatment process, provides a 100% renewable alternative energy source to fossil-fuel that helps co-generate electrical power and produce hot water required for the plant wastewater treatment processes.

The Westside Pump Station Reliability Improvements Project design team optimized the scope of the project to align with the available capital project budget and established a pre-qualified contractor pool for the construction contract bid opportunity. The project will bring efficiency and redundancy to this critical component of the westside system. Construction is expected to get started in summer 2021.

North Point Wet Weather Facility
Located near Fisherman’s Wharf, the North Point Wet Weather Facility (NPF) only operates when it’s raining and the SEP does not have capacity to handle the combined stormwater and sewage flows. As an exclusive wet-weather treatment facility dedicated to reducing the rain’s impact on the City’s Bayside system, the NPF provides pre-treatment and primary-level treatment with disinfection of wastewater before discharging into the Bay during heavy storms.

Planning for the North Shore Wet Weather Pump Station Project continued through this period and construction is anticipated to begin in 2021. The project will replace four dry weather pumps with larger units providing redundancy during wet weather, upgrade electrical distributed control systems (DCS), address corrosion and ensure this facility continues to protect our community and the health of the Bay.

Digester Gas Utilization Upgrade Project - Concrete pour on future location of gas holder tank that will hold excess digester gas.

North Point Facility Outfall Rehabilitation Project: installation of outfall structure beneath pier 35
A vast city under the City, including sewer pipes, pump stations and catch basins, collects and conveys wastewater to our treatment facilities where it is cleaned and discharged into the San Francisco Bay or Pacific Ocean. These facilities are critical components of San Francisco’s wastewater operations. The Collection System improvements in the SSIP include upgrades that enhance collection system condition and reliability, improvements to stormwater management to reduce flooding, protection of assets against sea level rise, increase flexibility for wet weather operations, and protection of water quality. By completing these projects, SFPUC will continue to offer reliable and high-quality sewer services to all who live, work, and play in San Francisco.

**Pump Station Upgrades**

Originally built in 1954, the Mariposa Pump Station is a dry-weather pump station that pumps wastewater from the surrounding Mission Bay area to the Southeast Treatment Plant for treatment.

The Mariposa Pump Station Improvements Project will construct a new, higher-capacity pump station and replace the existing dry-weather force main with a larger force main to accommodate the full buildout of the Mission Bay community, the new Chase Center, and planned population growth in the Potrero Hill neighborhood. Completion is anticipated in winter 2021.

In 2020, construction was completed for the Griffith Pump Station Improvements Project. The Griffith Pump Station has been in service since the 1980’s and is a critical facility that provides both dry-weather and wet-weather conveyance from the southern sections of the City to the Southeast Treatment Plant.

**Collection System Reliability Program**

These projects help ensure that wastewater and stormwater are safely delivered to our treatment plants 24/7. The SFPUC partners with SFMTA and SFPW to “dig once” where feasible to reduce impacts to the community and deliver projects more efficiently. These interdepartmental projects include the Van Ness Improvement Project, Geary Rapid Transit Project, L Taraval Improvement Project and the Better Market Street Improvement Projects to upgrade aging sewer infrastructure while the City performs above ground surface and transit improvements. The partnership ensures maximization of City resources and minimization of disruption to the communities we serve.

As of June 2020, all of the sewer replacement work on SFMTA’s Van Ness Improvement Project was completed. Approximately 19,300 feet of sewers, 190 catch basins, and 80 manholes were installed. On both the Geary Sewer & Water contract and the L Taraval Segment A contract, 80% of the sewer work was completed by mid-2020. Redesign work on Better Market Street Phase 1 is underway.

Following the condition assessment of eight-miles of large-diameter sewers (sewers larger than 36-inches in diameter), three projects have completed the planning efforts and are progressing into the design phase, including one project going into the construction phase in 2020.

**Flood Resilience Projects**

The SFPUC is committed to providing flood resilience through grant assistance for property owners in flood risk areas and implementing SSIP capital projects to meet the Level of Service storm.

Several SSIP projects are in the planning phase to provide Level of Service stormwater management for the following areas:

- Folsom Area Stormwater Improvement Project, located in the low-lying inner Mission neighborhood around 17th and 18th streets; the Lower Alemany Area Stormwater Improvement Project surrounding the US 101 and I-280 interchange; and the Wawona Area Stormwater Improvement Project, located around 15th Avenue & Wawona Street.
- Additional flood resilience and stormwater management projects are included in the 10-year Capital Improvement Plan. No sewer system can handle the heaviest of storms, so the SFPUC is coordinating with other City agencies to advance a comprehensive program to build flood resilience into the fabric of our City. Learn more at sfpec.org/rain-ready.

**Green Infrastructure Stormwater Management Projects**

Green infrastructure is a stormwater management tool that takes advantage of the natural processes of soils and plants in order to slow down and clean stormwater and keep it from overwhelming the City’s sewer system. As we upgrade our aging combined sewer system, we’re integrating a mix of green and grey infrastructure projects to better manage stormwater. Managing stormwater, which may otherwise wash pollutants into our watersheds or overwhelm our sewer system, is critical to protecting water quality, wildlife and public health. The SFPUC is moving closer to the City’s goal of managing one billion gallons of stormwater with green infrastructure by 2050.

Construction was completed at the end of June 2020 on the Baker Beach Green Streets project. This project constructed green infrastructure in three locations in the Richmond District: bioretention planters within Lincoln Park, more planters and permeable pavement on Sea Cliff Avenue, and rain gardens at the 25th Avenue North entry Baker Beach.

The Sunset Boulevard Greenway project’s Phase 2 of construction began in November 2019 implementing construction of rain gardens and bioretention basins along several blocks of Sunset Boulevard spanning Lincoln Avenue to Wawona Street. Construction of the Learning Lab adjacent to St. Ignatius College Preparatory will offer students in the neighborhood a place to gather to study stormwater management via green infrastructure.
Green Infrastructure Grant Program

During the past year, four green infrastructure grants were awarded totaling more than $3.5M for the construction of green infrastructure on privately-owned property: Bessie Carmichael MS ($428K), St. Thomas Moore School and Church ($1,118K), Holy Trinity Greek Orthodox Church ($1,558K), and Lycee Francais School ($480K). Grantees started construction at two project sites: Lafayette Elementary School and Bessie Carmichael Middle School.

SFPUC issued a reservation letter to San Francisco Recreation & Parks Department (SFRPD) for construction of green infrastructure at Crocker Amazon Playground, and grant award is likely Fall 2020. With a high level of interest in the grant program, the grant team continued to conduct site visits and pre-application review meetings. In addition to the grants awarded during the past year, there are two more grant applications under review.

Learn more about the benefits of green infrastructure.

Status of Early Implementation Projects

The table to the right represents the status, drainage management area, performance, and green infrastructure technology features of all eight early implementation projects, each constructed in one of San Francisco’s eight watersheds.

<table>
<thead>
<tr>
<th>Projects</th>
<th>Status</th>
<th>Drainage Management Area (in Acres)</th>
<th>Performance (gallons of Stormwater per year)</th>
<th>Features</th>
</tr>
</thead>
<tbody>
<tr>
<td>Baker Beach Green Street</td>
<td>Completed</td>
<td>17.6</td>
<td>3.1M</td>
<td>32 Rain gardens constructed covering 6,746 Sft. of land; 6,526 Sft. of pervious concrete; 10,347 Sft. of infiltration gallery</td>
</tr>
<tr>
<td>Chinatown Green Alley</td>
<td>Completed</td>
<td>0.1</td>
<td>0.03M</td>
<td>203 Sft. of Rain gardens</td>
</tr>
<tr>
<td>Holloway Green Street</td>
<td>Completed</td>
<td>2.4</td>
<td>0.9M</td>
<td>17 Rain gardens constructed covering 2,148 Sft. of land; 16,094 Sft. of pervious concrete</td>
</tr>
<tr>
<td>Mission and Valencia Green Streets Gateway</td>
<td>Completed</td>
<td>3.4</td>
<td>1.8M</td>
<td>11 Rain gardens constructed covering 3,700 Sft. of land; 1,215 Sft. of infiltration gallery</td>
</tr>
<tr>
<td>Visitacion Valley Green Nodes</td>
<td>Completed</td>
<td>1.85</td>
<td>1.0M</td>
<td>8 Rain gardens constructed covering 3,745 Sft. of land</td>
</tr>
<tr>
<td>Wiggle Neighborhood Green Corridor</td>
<td>Completed</td>
<td>3.9</td>
<td>1.82M</td>
<td>7 Rain gardens constructed covering 1,045 Sft. of land; 7,651 Sft. of pervious concrete</td>
</tr>
<tr>
<td>Sunset Boulevard Greenway</td>
<td>Construction</td>
<td>7.7</td>
<td>5.3M</td>
<td>30 Rain gardens constructed covering 16,826 Sft. of land</td>
</tr>
<tr>
<td>Upper Yosemite Creek Daylighting</td>
<td>Planning - Request for Proposals (RFP) for Engineering Services pending</td>
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</tbody>
</table>
Community Outreach

As we make critical investments in our infrastructure, the SFPUC aims to be a good neighbor by reaching out to our communities, engaging local businesses, expanding job training, and supporting neighborhood improvement initiatives.

Meeting (Virtualy) in Your Neighborhood

The SSIP Communications Team is focused on providing a variety of ways for our neighborhoods and neighbors to participate in the planning and delivery of these critical projects. This includes our participation in local organization events, citywide events and small group presentations and briefings.

With the onset of COVID-19, the traditional ways of connecting and engaging with our stakeholders evolved to include virtual meetings and more in-depth and real-time digital communications. While much of San Francisco sheltered in place and worked from home, our crews continued to deliver essential upgrades while following strict COVID-19 safety guidelines.

Social Media and Online Engagement

Social media continues to be an excellent avenue to share information with community members and residents about the programs and projects taking place in their neighborhood. Video content has seen a rise in popularity as our communications team held a series of Virtual Explorations to highlight the Programs and services of the SFPUC. Videos continue to be a great way to share programs and partnerships such as our SSIP CityWorks interns or residents who Adopt a Drain, as well as showcasing neighborhood projects that benefit the entire city. Where large scale projects are underway, like at our Southeast Treatment Plant in the Bayview, we’re rolling out Virtual Office Hours, planning Spotify advertisements and sharing regular bi-weekly construction updates to keep the community updated on progress and construction activities.

16 Street fairs events
8,000+ eNewsletter Subscribers
18 Community Meetings and Workshops
65 news articles/video segments

All data is through June 2020

Local government representatives Shaman Walton and Scott Weiner celebrate completion of McLaren Park green infrastructure project
Community Engagement

The SFPUC is the first public utility in the nation to adopt Environmental Justice and Community Benefits policies. Our “good neighbor” policies ensure we are giving back to the communities where we provide high-quality water, power, and sewer services. We are especially committed to working with communities that are most impacted by our operations. Guided by these policies, the SSIP is a once in a lifetime opportunity to leverage our investments and partnerships to support environmental, workforce, education, and art initiatives in the Bayview-Hunters Point neighborhood, which is home to our Southeast Treatment Plant.

Youth Employment: SSIP CityWorks

We are committed to supporting programs which expose, inspire, and prepare the next generation of our workforce for careers that support the critical systems on which we all rely. The SSIP CityWorks Internship Program concluded its eighth year of providing paid summer internships to students from San Francisco’s Southeast neighborhoods. Sponsored by social impact commitments from private engineering firms and managed by Young Community Developers (YCD), the program allowed 15 interns to spend eight weeks working with the SFPUC or private firms on SSIP projects happening in their community. SSIP CityWorks interns learned valuable on-the-job skills such as: engineering, architecture, environmental management, and communications. Interns also visited the SFPUC’s Southeast Treatment Plant and Hetch Hetchy Reservoir, which provided a tangible understanding of the Agency’s water and wastewater operations. To date, 91 students have participated in the CityWorks Interns Program, 31 interns have graduated college, 44 are currently attending a university and eight recently graduated from high school.

Small Business Development: Contractors Assistance Center

We remain committed to supporting local and small businesses by providing them with the tools and resources to adequately get ACCESS to, COMPETE for, and PARTICIPATE in upcoming contracting opportunities. The Contractors Assistance Center helps these businesses build capacity and provides technical/administrative assistance to help make them competitive candidates for contracting opportunities around the City and on capital programs like the SSIP.

Moving Forward

We are excited to see major construction milestones occur in the coming years. In FY20/21 six of the eight green infrastructure stormwater management projects will be completed, and construction of the Southeast Treatment Plant improvements will be underway.

As our SSIP projects become more visible to the community with construction ramping-up, our goal remains the same: Be a good neighbor. We will take care to work with residents to minimize construction impacts and continue to help our community leverage the benefits of project construction work by employing residents and local firms. Under SSIP we can truly work together to rebuild and improve our combined sewer system now, and for future generations.

We look forward to seeing projects the community has helped plan become a reality in the coming years.