

File No. 211018

Committee Item No. 4

Board Item No. _____

COMMITTEE/BOARD OF SUPERVISORS

AGENDA PACKET CONTENTS LIST

Comm: Public Safety & Neighborhood Services

Date: November 19, 2021

Board of Supervisors Meeting:

Date: _____

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| <input checked="" type="checkbox"/> | <input type="checkbox"/> | BLA Presentation - October 14, 2021 |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | L. Carnes Presentation - October 14, 2021 |

Prepared by: Alisa Somera

Date: November 13, 2021

Prepared by: _____

Date: _____

Performance Audit of the Department of Public Works’ Street Resurfacing Program and StreetTreeSF Program

Prepared for the

**Board of Supervisors
of the City and County of San Francisco**

by the

San Francisco Budget and Legislative Analyst

June 14, 2021

CITY AND COUNTY OF SAN FRANCISCO
BOARD OF SUPERVISORS
BUDGET AND LEGISLATIVE ANALYST

1390 Market Street, Suite 1150, San Francisco, CA 94102 | (415) 552-9292

June 14, 2021

President Shamann Walton and Members of the San Francisco Board of Supervisors
Room 244, City Hall
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

Dear President Walton and Members of the Board of Supervisors:

The Budget and Legislative Analyst is pleased to submit this *Performance Audit of the Department of Public Works' Street Resurfacing Program and StreetTreeSF Program*. In response to a motion adopted by the Board of Supervisors in July 2019 (Motion 19-108), the Budget and Legislative Analyst conducted this performance audit, pursuant to the Board of Supervisors powers of inquiry as defined in Charter Section 16.114 and in accordance with U.S. Government Accountability Office (GAO) standards, as detailed in the Introduction to the report.

The performance audit contains nine findings and 21 recommendations, of which 15 are directed to the Director of Public Works or other Public Works managers, three are directed to the City Purchaser, and three are directed to the Board of Supervisors. The Executive Summary, which follows this transmittal letter, summarizes the Budget and Legislative Analyst's findings and recommendations. The recommendations intend to improve management of street resurfacing, street tree maintenance, and the City's street tree canopy.

The Acting Director of Public Works has provided a written response to our performance audit, attached to this report on page A-1. The Department agrees or partially agrees with all of our recommendations. The Acting Director of Contract Administration/Purchasing has also provided a written response, which is attached to this report on page B-1. The Acting Director of Contract Administration/Purchasing agrees with all of our recommendations.

President Walton and Members of the Board of Supervisors

June 14, 2021

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We would like to thank the staff at the Department of Public Works and Office of Contract Administration for the assistance they provided during the audit.

Respectfully submitted,

A handwritten signature in black ink, appearing to be 'DG' or similar initials, written in a cursive style.

Dan Goncher
Principal

cc: Supervisor Chan
Supervisor Haney
Supervisor Mandelman
Supervisor Mar
Supervisor Melgar
Supervisor Peskin
Supervisor Preston
Supervisor Ronen
Supervisor Safai
Supervisor Stefani

Mayor Breed
Public Works Acting Director
Acting Director of Contract Administration/Purchasing
Clerk of the Board
City Attorney's Office
Mayor's Budget Director
Controller

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Executive Summary

The Board of Supervisors directed the Budget and Legislative Analyst's Office to conduct a performance audit of the Public Works' street resurfacing program and street tree maintenance program through a motion (M19-108) passed in July 2019. The scope of this performance audit includes the Department's management of pavement condition, pothole and patch paving services, baseline pruning of street trees, staffing and administration of StreetTreeSF, and the geographic distribution of StreetTreeSF services. The scope also includes the sustainability of funding available for street resurfacing and street tree canopy growth and geographic distribution. Broadly, we looked for opportunities to improve the effectiveness and efficiency of Department operations in these areas.

Section 1: Pavement Condition Across the City

San Francisco's Pavement Condition Index has improved in the past 10 years, and the City has reached its 2019 goal of achieving an overall Pavement Condition Index score of 74. However, pavement condition varies across different neighborhoods. In 2019 39 percent of the City's street segments rated as "failed," "poor," or "at risk" were concentrated in one area of the City. In addition, the benefits of the City's street resurfacing projects and overall improvement in the City's pavement condition have been unevenly distributed and realized differently across the City. The Street Resurfacing Program has established a citywide Pavement Condition Index score goal and monitors one metric of geographic equity as part of several considerations of street resurfacing projects but does not track or report on pavement condition by supervisorial district or City neighborhood. Further, there is no established goal to measure Pavement Condition Index improvement by supervisorial district or other meaningful geographic division.

Recommendations

The Director of Public Works should:

- 1.1 Establish Pavement Condition Index, or other meaningful metric, goals for each supervisorial district or other meaningful geographic divisions of San Francisco and include this metric in both the Department's internal PublicWorksStat reports and the City's publicly reported Performance Scorecards. If pavement conditions are proposed to be measured other than by Pavement Condition Index score and/or by a geographic divisions other than supervisorial district, report to the Board of Supervisors on the formal metric and formal proposed boundaries for geographic divisions.

Section 2: Pothole and Patch Paving Service Distribution and Performance Goals

The Bureau of Street and Sewer Repair has adopted a reactive approach to providing pothole and patch paving services in order to meet the Department of Public Works' performance goal of responding to 90 percent of San Francisco 311 pothole requests within 72 hours. While this performance metric measures the Department's responsiveness to the public, it does not necessarily align with the departmentwide priority of providing equitable and fair distribution of resources, because 311 report volumes are not evenly distributed across the City and do not always correspond to the overall condition of a district's streets. The Bureau has focused its delivery of pothole repair and patch paving services to meet its established performance goal; however, concentrating primarily on 311 calls creates the risk that the Department will focus its pothole repair and patch paving services on areas with high levels of reporting, rather than high levels of need.

Prior to SF311, the Department of Public Works had a formal pothole sweep program. However, to address the high volume of 311 calls for pothole and patch paving services and meet the Department's performance goal, this formal pothole sweep program was halted, and the Department currently conducts only periodic ad-hoc pothole sweeps for major City-wide events and at the request of the Director's Office. As a result, there is a risk that supervisorial districts with higher volumes of 311 reports will receive larger shares of pothole and patch paving services than the existing pavement conditions warrant.

Recommendations

The Superintendent of the Bureau of Street and Sewer Repair should:

- 2.1 Track and monitor the supervisorial districts or other meaningful geographic divisions of San Francisco in which pothole and patch paving repairs are made in PublicWorksStat reports beginning no later than July 1, 2022. If pothole and patch paving repairs are proposed to be tracked by geographic divisions other than supervisorial district, report to the Board of Supervisors on the formal proposed boundaries of the geographic divisions for approval.
- 2.2 Define and adopt geographic equity considerations or goals for pothole repair and patch paving services, so that 311 requests are not the only driver of BSSR's pothole repair and patch paving services no later than July 1, 2022.
- 2.3 As a pilot, consider re-instituting proactive pothole sweeps to assess the impact, if any, on BSSR's response time to 311 requests and the overall distribution of pothole repair

and patch paving services. Further, report back to the Board of Supervisors' Government Audit and Oversight Committee no later than June 30, 2022 on (a) future plans for use of proactive pothole sweeps, (b) the impacts to BSSR's response time with the use of proactive pothole sweeps, and (c) whether funding requirements are needed to meet both the responsiveness goal and proactive sweep recommendation.

Section 3: Street Resurfacing Change Order Review Process

Recent updates to controls over the Department of Public Works' construction procurement activities have not been formalized or integrated into the City's existing procurement workflows. In June 2020, at the recommendation of the City Controller, the Mayor formally changed the designation of the individual who may act as the Mayor's designee in various approval actions related to contracting functions of the Department of Public Works from the Director of the Department of Public Works to the Acting Director of the Office of Contract Administration and City Purchaser. However, the Office of Contract Administration's contract approval actions have not been fully integrated into a common contract review and approval system used by both the Department of Public Works and the Office of Contract Administration. Instead, contract review and approval actions are routed between Public Works and Contract Administration via email and DocuSign envelope. In addition, the Office of Contract Administration has not established written guidelines governing its review process or grounds for modification or rejection. Overall, the lack of guidelines and software integration puts the process at risk of inconsistent or incomplete reviews and reduces transparency.

Recommendations

The City Purchaser should:

- 3.1 Establish written guidelines that govern its review process for DPW contracts based on applicable provisions of Chapter 6 of the San Francisco Administrative Code, with input from construction management experts. These guidelines should specify grounds for delaying, modifying, or rejecting change orders and other contract actions.
- 3.2 Develop a process document for change order review in consultation with individuals with construction management expertise and revise the Construction Change Order Review checklist that was developed by the Department of Public Works to conform to Office of Contract Administration criteria, including the Department's internal evaluation of contractor estimates of change order costs.

- 3.3 Request that the designation of Mayor’s designee be revised by the Mayor to remove “Sailaja Kurella” specifically by name, and instead name the “Director or Acting Director of the Office of Contract Administration and City Purchaser.”

The Director of the Department of Public Works should:

- 3.4 Work with the Office of Contract Administration, City Purchaser, and City Administrator to agree upon and implement a common contract approval information system or tool to track the City Purchaser’s approval actions.

Section 4: Funding Sustainability for Street Resurfacing

The COVID-19 pandemic has hampered the City’s ongoing improvements to pavement condition, and the Street Resurfacing Program faces an uncertain funding future due to a variety of fiscal restraints and reductions resulting from the COVID-19 pandemic. FY 2019-20 was the first year since at least FY 2015-16 that the City did not meet its goal of paving or preserving 500 City street blocks. In addition, reductions to the City’s Pay-Go Program, which provides General Fund support to street resurfacing, will require the City to issue debt in order to continue financing street resurfacing projects and meeting its pavement condition goal.

Recommendations

The Director of Public Works should:

- 4.1 Prepare an action plan to be provided to the City Administrator and Board of Supervisors that includes strategies for ensuring that the City obtains sufficient funding to meet its road resurfacing goals.

Section 5: StreetTreeSF Baseline Pruning Progress

StreetTreeSF is not on track to meet its initial program goal of completing the recommended maintenance and removal of priority street trees in the first three to five years of the StreetTreeSF program. Through November 2020, only 45 percent of the City’s highest priority trees have been addressed by its block pruning schedule. StreetTreeSF management’s current projection is that it will complete its recommended maintenance and block pruning activities citywide by FY 2024-25, or eight years into program operations, rather than its initial goal of three to five years. This current projection assumes a rate-of-work that is faster than what the program

has been able to achieve to date, with the assumption that pruning will go more quickly because the remaining trees are in better condition.

Recommendations

The Superintendent of the Bureau of Urban Forestry should:

- 5.1 Establish a realistic annual goal for the number of StreetTreeSF trees to be pruned in each fiscal year, and report on the program's performance in meeting the annual pruning goal in annual reports and other communications to the public and the Board of Supervisors.
- 5.2 Establish a realistic annual goal for the number of StreetTreeSF tree-related cement repair sites to be completed in each fiscal year, and report on the program's performance in meeting the annual repair goal in annual reports and other communications to the public and the Board of Supervisors.

Section 6: StreetTreeSF Staff Vacancies

Key StreetTreeSF positions have been vacant for extended periods of time—in some cases, for the entire three-year period since the program's inception despite the Department participating in two citywide recruitments with a third underway when the COVID-19 pandemic began. The program has held onto the position authority, but reprogrammed the salary savings to contracts for tree pruning and removal work.

The Arborist Apprenticeship program—the goal of which is to develop a pipeline of diverse arborist apprentices to promote into the Arborist Technician position—has not filled any of its eight apprenticeship positions in the three years since the inception of StreetTreeSF. Currently, StreetTreeSF seeks a three-to-one ratio of arborists to apprentices as required by the State's Board of Apprenticeship Standards and for all eight apprentices to be hired as a cohort. However, given StreetTreeSF's hiring challenges, it is not likely that the program will be able to hire a sufficient number of Arborist Technicians and apprentices to establish the appropriate ratio and cohort size. The Arborist Apprenticeship program should be restructured so that StreetTreeSF can begin to create a pool of qualified candidates to promote into the Arborist Technician position. In addition, Public Works management should work with the Department of Human Resources to develop a Public Works specific recruitment for 3434 Arborist Technicians.

Recommendations

The Superintendent of the Bureau of Urban Forestry should:

- 6.1 Work with the Department of Human Resources to develop a recruitment for 3434 Arborist Technicians that is specific to the Department of Public Works.
- 6.2 Restructure the Arborist Apprentice Program, such as revising the cohort size of arborist technicians to apprentices and the training schedule, so that the program can begin to fill these positions and develop a pipeline for the arborist technician role.

Section 7: Geographic Distribution of StreetTreeSF Services

The distribution of StreetTreeSF tree maintenance and sidewalk repair services has been uneven across the City due to the program’s prioritization methodologies and the uneven distribution of trees and tree-related sidewalk damage within the City. Although program management states that equity is considered in the program’s work, StreetTreeSF did not explicitly consider geographic equity or the geographic distribution of services when the program began operations in FY 2017-18. Instead, program management prioritized work to maximize public safety and efficiency. As a result, some neighborhoods of the City have received very few StreetTreeSF services during the first three years of program operations. There is still opportunity to re-evaluate and re-prioritize the areas designated as lower-priority using additional criteria, including geographic location, given that StreetTreeSF management estimates that it will take until FY 2024-25 to complete the initial task of baseline pruning. Re-prioritizing the remaining un- and under-served areas of the City would allow the program to ensure that all neighborhoods receive at least some StreetTreeSF services in the near-term during FY 2021-22 and FY 2022-23.

Recommendations

The Superintendent of the Bureau of Urban Forestry should:

- 7.1 Consider re-evaluating and re-prioritizing the uncompleted street tree and cement repair work keymaps using additional criteria, including geographic location, for program activities once the keymaps are in the “green” or lowest priority tier.

Section 8: Street Tree Canopy Growth and Geographic Distribution

Phase I of San Francisco’s Urban Forest Plan established the goal of growing the City’s street tree population to reach 155,000 trees by 2034. Several other City documents, including the Ten-Year Capital Plan and the Climate Action Plan, also recommend increasing the number of street trees.

However, the City does not have a dedicated funding source for growing the street tree population and the Tree Maintenance funding cannot be used to expand the urban forest. Further, the number of new street trees planted each year is not enough to account for annual tree mortality in order to maintain a baseline street tree population of 125,000, much less increase the number of trees to meet the Urban Forest Plan's goal.

San Francisco's street tree population and its associated benefits are not evenly distributed across the City. The Urban Forest Plan recommends that within five years of the Plan's publication the Department of Public Works develop a citywide planting strategy to address gaps in street tree coverage, and a long-term street tree management plan to formalize a maintenance strategy and plan for the succession of trees. However, six years after the Urban Forest Plan was adopted, the Department has still not yet developed the recommended long-term street tree management plan and just completed the planting strategy after the completion of our audit fieldwork. The distribution of the City's urban canopy and its benefits will remain unevenly distributed across different neighborhoods without a targeted increase in street tree planting to focus on under-served neighborhoods that is guided by a formal planting strategy.

Recommendations

The Director of the Department of Public Works should:

- 8.1 Work with partner agencies, including the Urban Forestry Council, Friends of the Urban Forest, the Planning Department, and the Department of the Environment, to develop the citywide street tree management plan. In the management plan, increasing the street tree population in areas of the City with low street tree population numbers should be prioritized. The recently completed street tree planting strategy and the proposed citywide street tree management plan should be presented to the Board of Supervisors for review no later than June 30, 2022.
- 8.2 As part of the street tree management plan, develop a street tree planting funding strategy to support the City's new planting needs, including the use of state and federal grants, local bonds, General Fund support, and private charitable donations, that will supplement the existing funding for new tree planting.

The Board of Supervisors should:

- 8.3 Review the street tree planting funding strategy prepared by the Department of Public Works in accordance with recommendation 8.2 above and consider allocating General Fund support to the planting of new trees to close estimated annual funding gaps.

Section 9: StreetTreeSF Data Asset Management Limitations

The current data asset management systems used by StreetTreeSF were not designed specifically for tree maintenance and urban canopy management and were instead adapted from preexisting Department of Public Works data management systems. We found that the current data management infrastructure produces unreliable reports for basic measures of tree and sidewalk work completed. This data reliability challenge has led to inaccurate public reporting and hinders the program from accurately tracking its progress over time. We recommend that StreetTreeSF follow through on ongoing efforts to evaluate its current asset management systems, identify gaps, and establish a roadmap to a more robust asset management program.

Recommendations

The Board of Supervisors should:

- 9.1 Request that the Acting Director of Public Works or his designee report to the Government Audit and Oversight Committee on the findings and recommendations associated with the consultant's review of the Department's asset management system once completed, but not later than June 30, 2022.
- 9.2 Further, request that the Superintendent of the Bureau of Urban Forestry report back to the Government Audit and Oversight Committee on actions taken to implement a robust asset management system for StreetTreeSF not later than June 30, 2022.

The Superintendent of the Bureau of Urban Forestry should:

- 9.3 Ensure that the new asset management system is designed in a way to: (a) enable the StreetTreeSF program to filter exclusively for maintenance and sidewalk repair work funded by Proposition E and (b) limit the need for manual human review of data as a prerequisite to ensure accuracy.
- 9.4 Issue a revised FY 2018-19 Annual Report that corrects errors in the number of trees pruned and square feet of sidewalk repaired.

Introduction

The San Francisco Board of Supervisors directed the Budget and Legislative Analyst's Office to conduct a performance audit of the Department of Public Works' street resurfacing program and StreetTreeSF street tree and sidewalk maintenance program through a motion (M19-108) passed on July 19, 2019.

Scope

The scope of this performance audit includes all functions of the Department of Public Works' Street Resurfacing Program and StreetTreeSF street tree and sidewalk maintenance program. Broadly, we looked for opportunities to improve the efficiency and effectiveness of the operations of these two programs.

Methodology

We conducted this performance audit in accordance with Generally Accepted Government Auditing Standards (GAGAS), 2018 Revision, issued by the Comptroller General of the United States, U.S. Government Accountability Office. In accordance with these requirements and standard performance audit practices, we performed the following performance audit procedures:

- Conducted an entrance conference on July 21, 2020 with the Public Works Acting Director and the Deputy Director for Finance and Administration.
- Submitted an initial request for information to obtain core documents and data.
- Conducted interviews with Department management and other staff to gain an overview of Department functions and processes. We also conducted an interview with the City's Acting Purchaser and Director of Contract Administration.
- Reviewed and analyzed the Department's budget, organizational chart, staffing and vacancies, information systems, policies and procedures, annual reports, strategic plans, and other documents related to street resurfacing and StreetTreeSF.
- Reviewed and analyzed 3-1-1 service request data, street resurfacing change orders, as well as citywide and internal departmental data on street trees, sidewalk repairs, pothole repairs, and other street resurfacing activities.

- Submitted a draft report, with findings and recommendations, to the Public Works Acting Director on May 6, 2021; and conducted an exit conference with Department staff on June 3, 2021.
- Submitted a draft report with findings and recommendations to the City’s Acting Purchaser and Director of Contract Administration on May 6, 2021; and received written feedback on June 7, 2021.
- Submitted the final draft report, incorporating comments and information provided at the exit conference, to the Acting Public Works Director and the Acting City Purchaser/Director of Contract Administration on June 8, 2021.

Overview of the Street Resurfacing Program and Pothole Repair

Pavement condition and pavement management

The Street Resurfacing Program considers several factors in the overall street resurfacing strategy, with the main priority of focusing on the overall network Pavement Condition Index (PCI), a metric that is used to evaluate and score pavement condition. Public Works staff note that the roadway conditions, usage, and distribution of street segments across the City is not equal, which complicates geographic equity efforts.

The Pavement Condition Index (PCI) metric is a numeric rating of road conditions on a scale of 0 to 100. The PCI rating assessment is based on surveys performed by evaluators certified by the Metropolitan Transportation Commission’s StreetSaver Rater Program. Each segment of road is evaluated based on ride quality, cracking, and other signs of pavement distress. As shown in Exhibit I.1 below, a PCI score of 85-100 is rated as “excellent,” 70-84 as “good,” 50-69 as “at-risk,” 25-49 as “poor,” and 0-24 as “very poor.”

Exhibit I.1: Pavement Condition Index Score Categories

PCI Range	Description
85-100	Excellent
70-84	Good
50-69	At-Risk
25-49	Poor
0-24	Very Poor

Source: City Performance Scorecards- Pavement Condition Index; Accessible at <https://sfgov.org/scorecards/livability/pavement-condition-index>

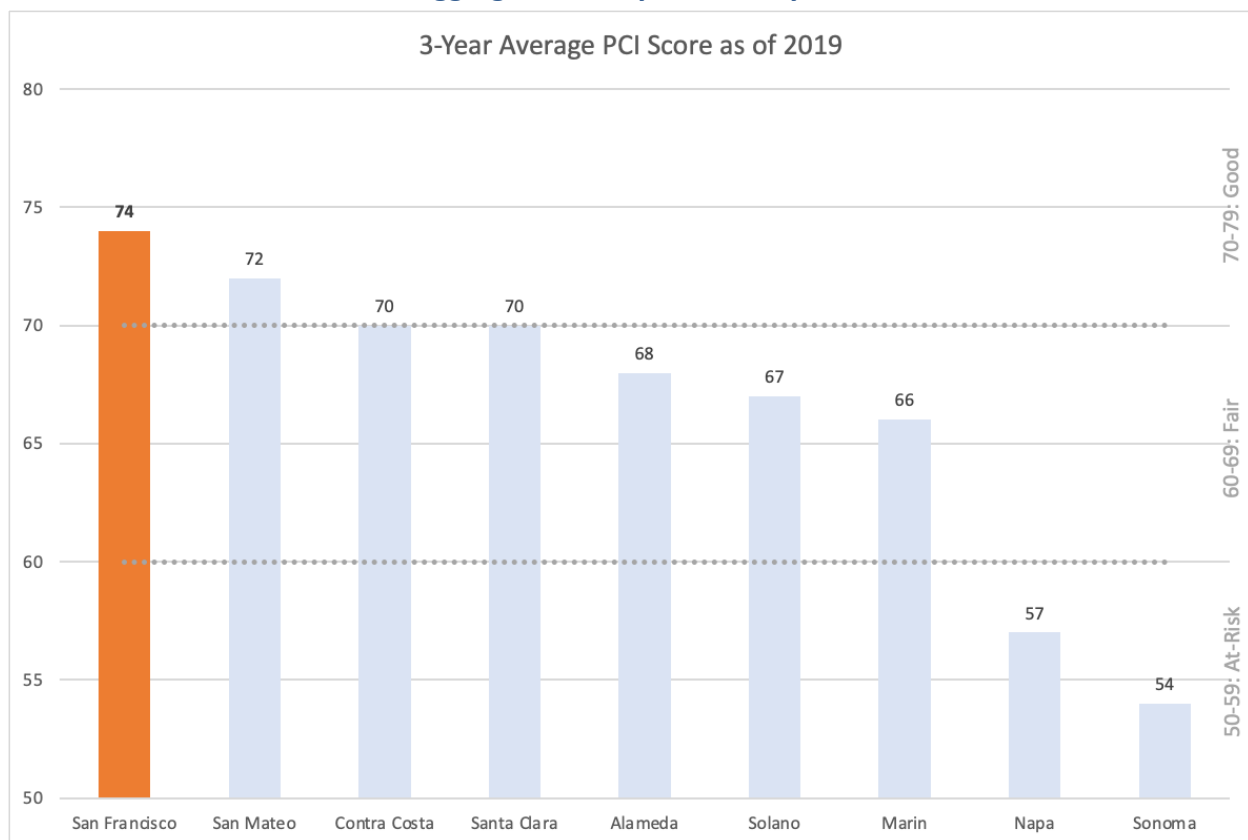
The Metropolitan Transportation Commission (MTC) is the transportation planning, financing, and coordinating agency for the nine-county San Francisco Bay Area. The MTC is responsible for,

among other functions, compiling and standardizing PCI scores for all Bay Area cities and counties.

Public Works staff have noted that the Department strives to follow best practices of cost-effective treatments on the appropriate street segments at the right time. This generally means that the Department focuses resources on the at-risk segments rather than a “worst first” approach due to the significant cost increases once a segment falls below the at-risk rating.

MTC’s report on the pavement condition of Bay Area jurisdictions as of the end of 2019 shows that San Francisco’s three-year average aggregate PCI was 74 out of 100, which is considered “good” condition. As shown in Exhibit I.2 below, the MTC found that, as of the end of 2019, San Francisco was performing better than any other county in the Bay Area in 2019.

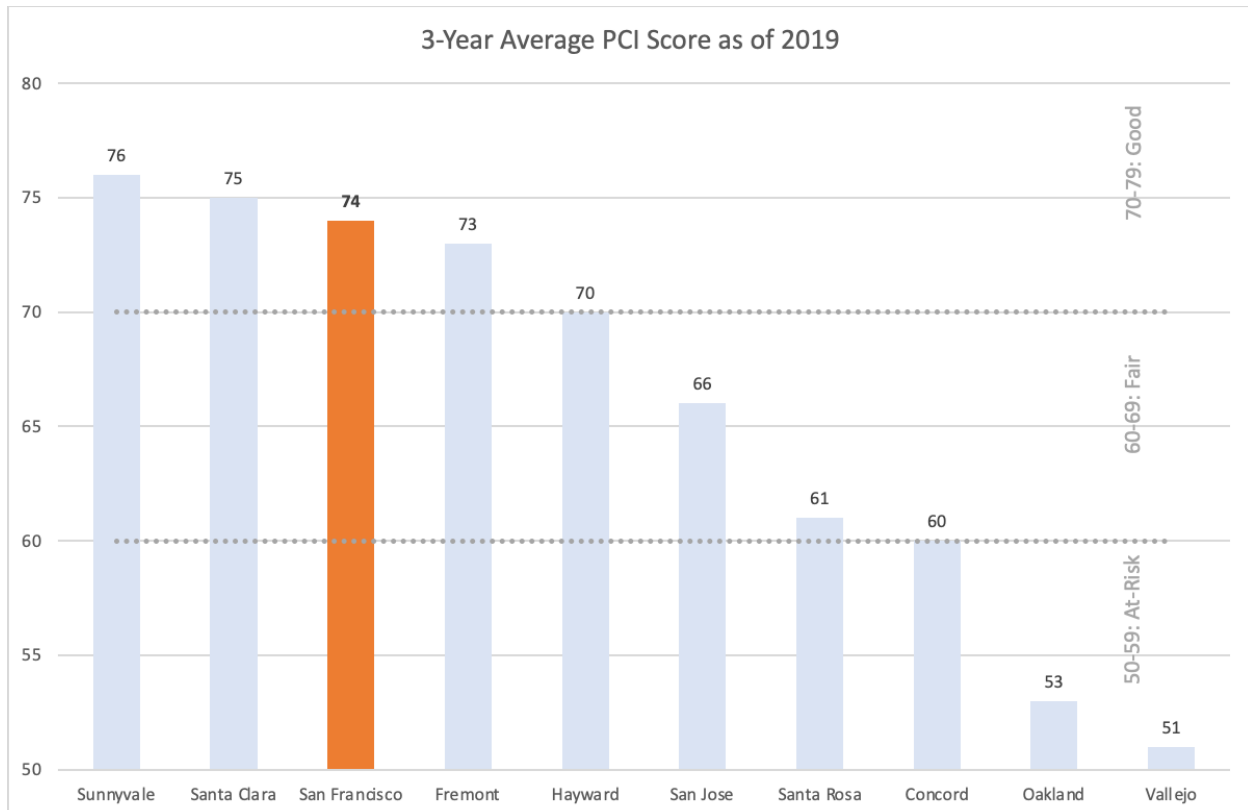
Exhibit I.2: Aggregate County PCI for Bay Area Counties



Source: *Pavement Conditions of Bay Area Counties 2019* published by the Metropolitan Transportation Commission

As shown in Exhibit I.3 below, San Francisco's PCI score also compares favorably to most other large cities¹ in the Bay Area. As of 2019, San Francisco had the third-highest three-year average aggregate PCI score among the 10 most populous cities in the Bay Area. A more detailed discussion of the City's PCI score is included in Section 1 of this report.

Exhibit I.3: Aggregate PCI for 10 Most Populous Bay Area Cities, 2019



Source: *Pavement Conditions of Bay Area Counties 2019* published by the Metropolitan Transportation Commission

Street resurfacing and pothole repair organizational structure

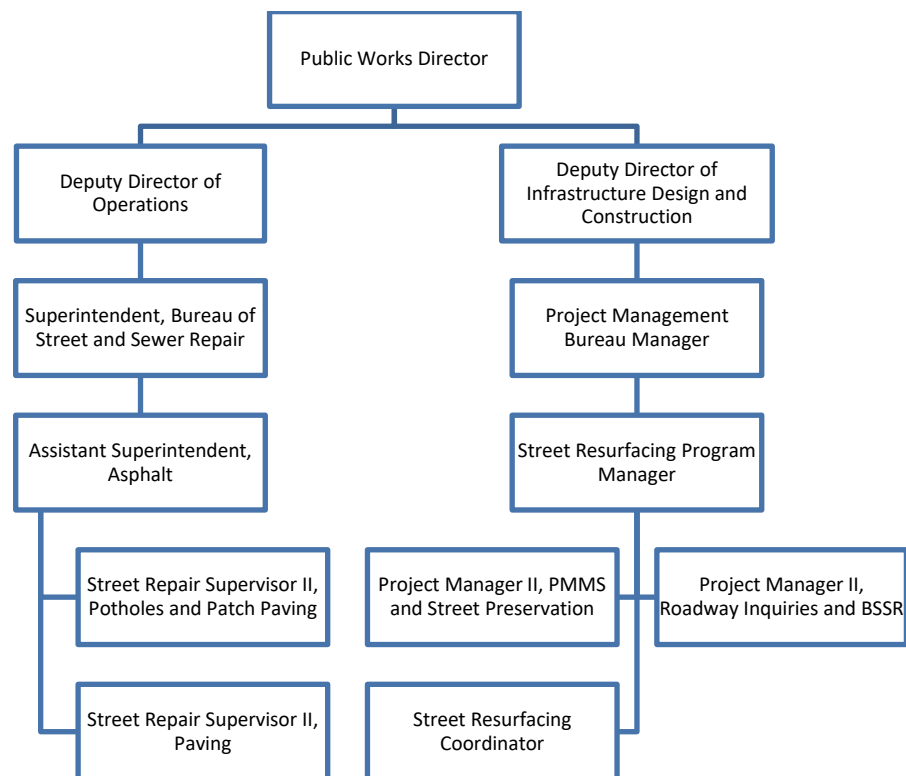
The **Street Resurfacing Program**, housed within Public Works' Infrastructure Design and Construction Division, manages and coordinates the maintenance and resurfacing of City accepted streets. The program manages capital paving projects; plans and oversees paving project coordination with other agencies; responds to roadway inquiries; oversees paving done by in-house paving crews within the Operations Division; and monitors the pavement condition of City streets.

¹ For the purposes of these comparisons, we reviewed the PCI scores of the 10 largest cities in the nine county Bay Area. Department staff note that they consider San Jose and Oakland to be their closest peers.

The Bureau of Street and Sewer Repair, housed within Public Works' Operations Division, oversees the Department's **in-house street resurfacing and pothole repair activities**. The Bureau's paving crews carry out block paving work for projects managed by the Street Resurfacing Program, and the Bureau's pothole repair crews respond to requests for pothole repair, patch paving, street depressions, sink holes, emergency make-safes, and other roadway defects.

The organizational structure of street resurfacing and pothole repair is shown in I.4 below.

Exhibit I.4: Street Resurfacing and Pothole Repair Organizational Structure



Source: Department of Public Works, Infrastructure Design and Construction Division

Budgets and staffing for street resurfacing and pothole repair

As shown in Exhibit I.5 below, the Department of Public Works has spent between approximately \$50.7 million and \$77.3 million on street resurfacing (not including pothole/patch paving) annually over the last three years from various funding sources. The decrease in expenditures in FY 2019-20 was mostly due to the reduction of General Fund support for road resurfacing to account for a sharp reduction in citywide General Fund revenues in that year. A more detailed discussion of the funding for street resurfacing is included in Section 4 of this report.

Exhibit I.5: Public Works Street Resurfacing Annual Expenditures by Funding Source

Fund	FY 2017-18	FY 2018-19	FY 2019-20
General Fund	\$48,594,302	\$49,984,946	\$21,911,668
Gas Tax HUTA	7,943,309	6,004,007	4,393,629
Gas Tax RMRA	728	4,200,203	15,584,275
Federal Grant	6,162	5,788	-
State Grant	-	25,328	1,122,976
Prop K/AA Local Grant	6,336,289	6,087,634	6,365,360
Local (GO Bond)	14,379,613	5,027,181	1,308,684
Total Expenditures	\$77,260,404	\$71,335,086	\$50,686,591

Source: Peoplesoft, City's Financial System

Notes: **Gas Tax HUTA** is the Highway Users Tax Account, which is the local portions of the per-gallon excise taxes on gasoline and diesel fuel and registration taxes on motor vehicles. **Gas Tax RMRA** is the Road Maintenance and Rehabilitation Account, which allocates much of the revenue from the Road Repair and Accountability Act of 2017. **Local (GO Bond)** are funds from the Road Repaving and Street Safety General Obligation bond passed by voters in November 2011.

As shown in Exhibit I.6 below, the Department of Public Works has budgeted and spent between \$2 million and \$2.5 million per year over the last three years on pothole and other spot street repairs citywide.

Exhibit I.6: Public Works Street Pothole Repair Annual Expenditures

	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21
Budgeted Expenditures	\$2,144,154	\$2,251,360	\$2,363,930	\$2,112,852
Actual Expenditures	1,965,581	2,474,496	1,999,026	1,215,412 ²

Source: City Budget System

Department staff have noted that part of the decrease in expenditures in FY 2019-20 is the result of a decrease in available labor to address street repair-related issues even though the need for such services did not decrease. The decrease in available labor was due to the COVID-19 pandemic and the Mandatory Stay at Home Order. As a result, a portion of the Bureau of Streets and Sewer Repair staff was assigned to other essential Public Works functions that were not related to street repair.

² Year to date expenditures as of June 7, 2021.

As shown in Exhibit I.7 below, the Department of Public Works budget has included approximately 100 full time equivalent (FTE) positions in the Bureau of Street and Sewer Repair for street paving, pothole/patch paving, and other non-street resurfacing or pothole-related projects performed for other departments including sewer repairs, San Francisco Municipal Transportation Agency (SFMTA) speed humps, curb ramps, or other non-street resurfacing projects for other City departments over the last three fiscal years.

Exhibit I.7: Public Works Street Resurfacing Budgeted Full Time Equivalent Positions

Function	FY 2017-18	FY 2018-19	FY 2019-20
Paving	33.32	33.38	33.38
Pothole/Patch Paving	17.64	17.73	17.69
Other (Interdepartmental)*	48.98	48.83	48.55
Total FTEs	99.94	99.94	99.62

*Other Bureau of Street and Sewer Repair staff resources, which are dedicated to other non-street resurfacing or pothole-related projects performed for other departments, including sewer repairs, SFMTA speed humps, curb ramps, or other non-street resurfacing.

Source: City budget system

Overview of the StreetTreeSF Street Tree and Sidewalk Maintenance Program

Creation and funding of the StreetTreeSF program

Street trees are trees growing within the City's public right-of-way, including unimproved public streets and sidewalks, and any tree growing on land under the jurisdiction of the Department of Public Works.

Prior to July 1, 2017, private property owners and other government agencies were responsible for both the routine and major maintenance of a majority of the City's street trees. Routine street tree maintenance includes adequate watering; weed control; removal of tree-well trash; fertilizing; sidewalk repairs related to the tree's growth or root system; and other minor tree maintenance actions. Major street tree maintenance includes structural pruning to maintain public safety and to sustain the health, safety, and natural growth of the tree; pest and disease management; and replacement of dead or damaged trees.

In November 2016, San Francisco voters approved Proposition E, which transferred responsibility for the maintenance of San Francisco's street trees and tree-related sidewalk damage from

property owners to the Department of Public Works beginning July 1, 2017. Proposition E also created a Street Tree Maintenance Fund administered by the Department of Public Works to fund:

- a. the maintenance and removal of street trees,
- b. the necessary costs of administering the Fund, and
- c. grants totaling up to \$500,000 annually to the San Francisco Unified School District (SFUSD) to fund the maintenance and removal of trees on SFUSD property.

Beginning in FY 2017-18, the City is required to contribute \$19 million each year to the Street Tree Maintenance Fund, and beginning in FY 2018-19, the \$19 million contribution is adjusted by the percentage increase or decrease in aggregate City discretionary revenues, as determined by the Controller. The City may suspend growth in the \$19 million contribution to the Fund if the General Fund projected budget deficit for the upcoming fiscal year at the time of the Joint Report or March Update to the Five-Year Financial Plan exceeds \$200 million, adjusted annually by changes in aggregate discretionary revenues. Any amount unspent or uncommitted in the Fund at the end of the fiscal year is carried forward to the next fiscal year.

San Francisco's urban canopy and tree census

San Francisco was once a largely treeless landscape of expansive grasslands, sand dunes, and wetlands, but now has almost 700,000 trees growing along streets, parks, and private properties. Approximately 125,000 of the total trees in the City are considered street trees and therefore the responsibility of the StreetTreeSF program as previously explained.

The breakdown of street trees by supervisorial district, according to the most recent census (conducted in 2016), is shown in Exhibit I.8 below. In preparation for the launch of StreetTreeSF, the Bureau of Urban Forestry, in conjunction with the Planning Department, conducted a point-in-time census of all street trees and all tree-related sidewalks in the City. The point-in-time database is updated as tree and sidewalk maintenance actions are performed and as StreetTreeSF inspectors visit blocks to inspect tree and sidewalk conditions and to respond to public service requests. Because the street tree census counted empty tree wells and tree stumps, the total 129,669 reported below from the tree census is higher than the total number of City street trees (approximately 125,000).

Exhibit I.8: StreetTreeSF 2016 Census of Street Trees and Tree Sites by Supervisorial District

District	Total Street Trees	Percent
District 1	9,254	7.14%
District 2	15,410	11.88%
District 3	8,026	6.19%
District 4	9,251	7.13%
District 5	13,176	10.16%
District 6	9,247	7.13%
District 7	12,651	9.76%
District 8	17,130	13.21%
District 9	12,104	9.33%
District 10	16,428	12.67%
District 11	6,847	5.28%
Unknown	145	0.11%
Total	129,669	100.00%

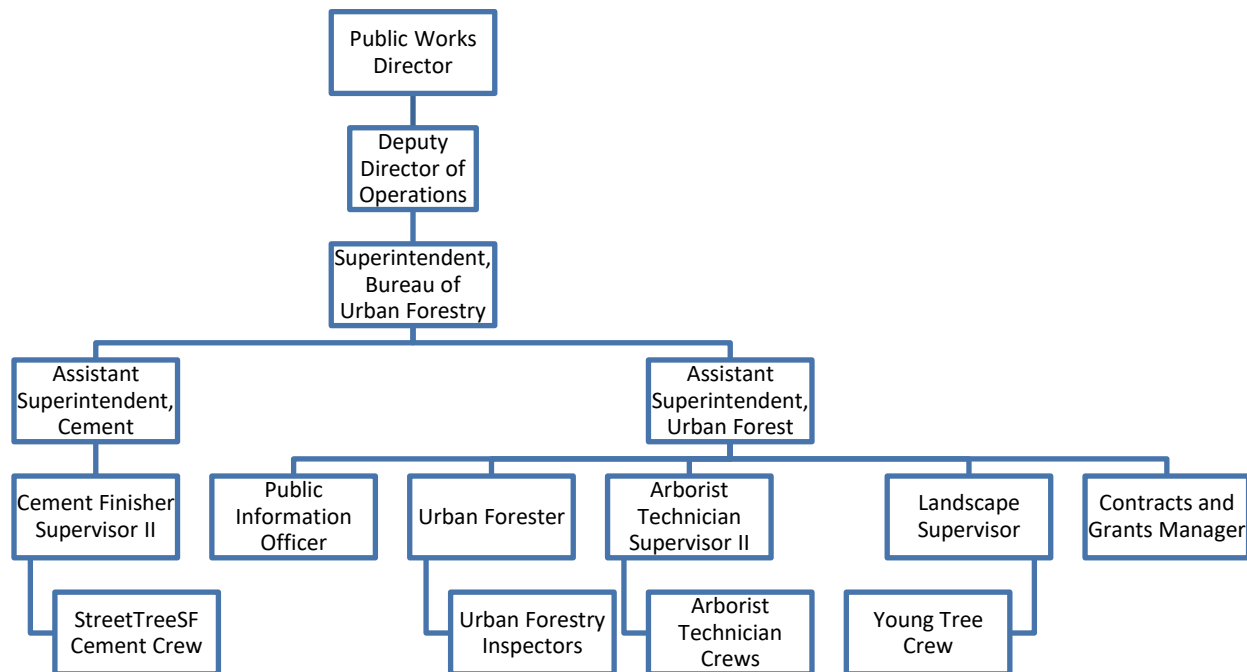
Source: StreetTreeSF

A detailed description of street tree distribution by district as well as background on San Francisco's biodiversity policy and prioritization of StreetTreeSF activities is included in Sections 7 and 8 of this report. A detailed description of the progress StreetTreeSF has made in achieving the goals laid out in its implementation plan is included in Section 5 of this report.

StreetTreeSF program budget and organizational structure

StreetTreeSF is managed by the Bureau of Urban Forestry within the Operations Division of the Department of Public Works. The Bureau of Urban Forestry is budgeted for six arborist crews with four operational and responsible for street tree maintenance. In addition, the StreetTreeSF program currently consists of a crew of cement masons who carry out repairs of tree-related sidewalk damage; and urban forestry inspectors who conduct tree inspections, conduct quality assurance, and participate in the street tree permitting and appeals process. StreetTreeSF also includes a public information officer, a contracts and grants manager, and a portion of the young tree landscape crew that support the maintenance of new trees and perform other eligible maintenance like tree basin backfills. A more detailed discussion of the program's staffing resources and level of vacancies is included in Section 6 of this report.

StreetTreeSF's organizational structure is shown in Exhibit I.9 below.

Exhibit I.9: StreetTreeSF Organizational Structure

Source: Department of Public Works, Bureau of Urban Forestry

As shown in Exhibit I.10 below, the StreetTreeSF original annual budget has grown from \$19 million in FY 2017-18 to \$22,438,000 at the start of FY 2019-20. However, due to the budget impacts of the public health emergency, mid-year cuts reduced the FY 2019-20 allocation by \$1.2 million.

Exhibit I.10: StreetTreeSF Original Budgets FY 2017-18 through FY 2019-20

Account Category	FY 2017-18	FY 2018-19	FY 2019-20
Salaries	\$2,480,955	\$3,982,153	\$4,098,837
Programmatic Projects	-	-	1,768,000
Mandatory Fringe Benefits	1,374,169	1,532,406	1,619,923
Overhead and Allocations	1,638,296	2,357,398	2,387,711
Non-Personnel Services	7,629,677	6,995,573	7,532,034
Materials and Supplies	200,893	382,920	382,920
Capital Outlay	2,675,463	2,318,651	2,446,594
Services of Other Departments	3,000,547	2,200,899	2,201,981
Total Expenditures	\$19,000,000	\$19,770,000	\$22,438,000

Source: City Budget System

As of FY 2019-20, StreetTreeSF had a personnel budget of a little over 60 full time equivalent (FTE) authorized positions as shown in Exhibit I.11 below. Due to budgeted attrition the actual budgeted positions were 27.84 in FY 2017-18, 40.83 in FY 2018-19, and 40.34 in FY 2019-20. A more detailed discussion of the program's budgeted positions and vacancy rates is included in Section 6 of this report.

Exhibit I.11: StreetTreeSF Authorized Positions FY 2017-18 to FY 2019-20

	FY 2017-18	FY 2018-19	FY 2019-20
Permanent FTEs	48.24	60.00	60.00
Temporary FTEs	2.71	2.11	2.05
Total FTEs	50.95	62.11	62.05

Source: FY 2017-18, FY 2018-19, and FY 2019-20 Annual Salary Ordinances

Acknowledgements

We would like to thank the staff of the Department of Public Works as well as the Acting City Purchaser/Director of Contract Administration for their assistance during this audit process.

1. Pavement Condition Across the City

San Francisco's Pavement Condition Index has improved in the past 10 years, and the City has reached its 2019 goal of achieving an overall Pavement Condition Index score of 74. However, pavement condition varies across different neighborhoods. In 2019 39 percent of the City's street segments rated as "failed," "poor," or "at risk" were concentrated in one area of the City. In addition, the benefits of the City's street resurfacing projects and overall improvement in the City's pavement condition have been unevenly distributed and realized differently across the City. The Street Resurfacing Program has established a citywide Pavement Condition Index score goal and monitors one metric of geographic equity as part of several considerations of street resurfacing projects, but does not track or report on pavement condition by supervisorial district or City neighborhood. Further, there is no established goal to measure Pavement Condition Index improvement by supervisorial district or other meaningful geographic division.

Pavement Condition Improvements

While the overall condition of the City's streets has improved in the past 10 years, pavement condition varies across different neighborhoods, and in 2019 many of the City's worst streets¹ were concentrated in one area. DPW staff notes that pavement conditions change yearly and the worst streets in any one year may not be the same streets the following year. Further, a review by our team of the distribution of the worst street segments across supervisorial districts found that there were less segments in these categories overall, and there was a more equitable distribution of such segments, in 2019 compared to 2015.

Pavement condition across districts

The Metropolitan Transportation Commission, the Bay Area's regional transportation agency responsible for planning, financing and coordinating transportation throughout the Bay Area, monitors and reports on the overall Pavement Condition Index (PCI) score of San Francisco. PCI ranges from 0 to 100, and scores fall within the following established ranges:

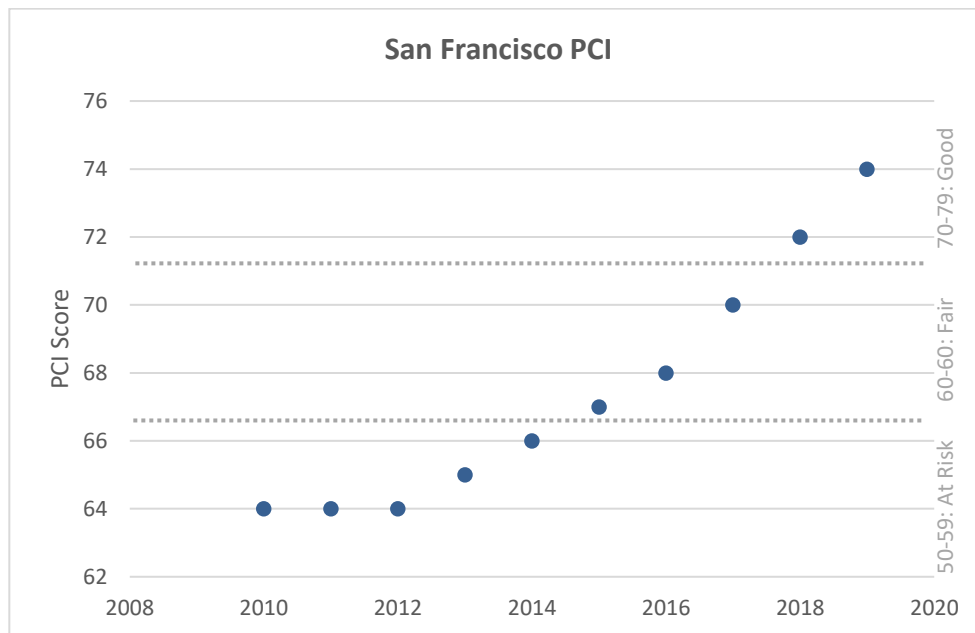
- **Failed:** PCI score of 0-24. Extremely rough pavement that needs complete reconstruction.
- **Poor:** PCI score of 25-49. Pavement shows extensive distress and requiring major rehabilitation or reconstruction.
- **At Risk:** PCI score of 50-59. Deteriorated pavement that requires immediate attention, including rehabilitative work.

¹ Those with a Pavement Condition Index score of "failed," "poor," or "at risk" as further described later in this section.

- **Fair:** PCI score of 60-69. Pavement at the low end of this range is significantly distressed and may require a combination of rehabilitation and preventive maintenance.
- **Good:** PCI score of 70-79. Pavement requires mostly preventive maintenance and shows only low levels of distress.
- **Very Good/Excellent:** PCI score of 80-100. Newly constructed or resurfaced pavement with few signs of distress.

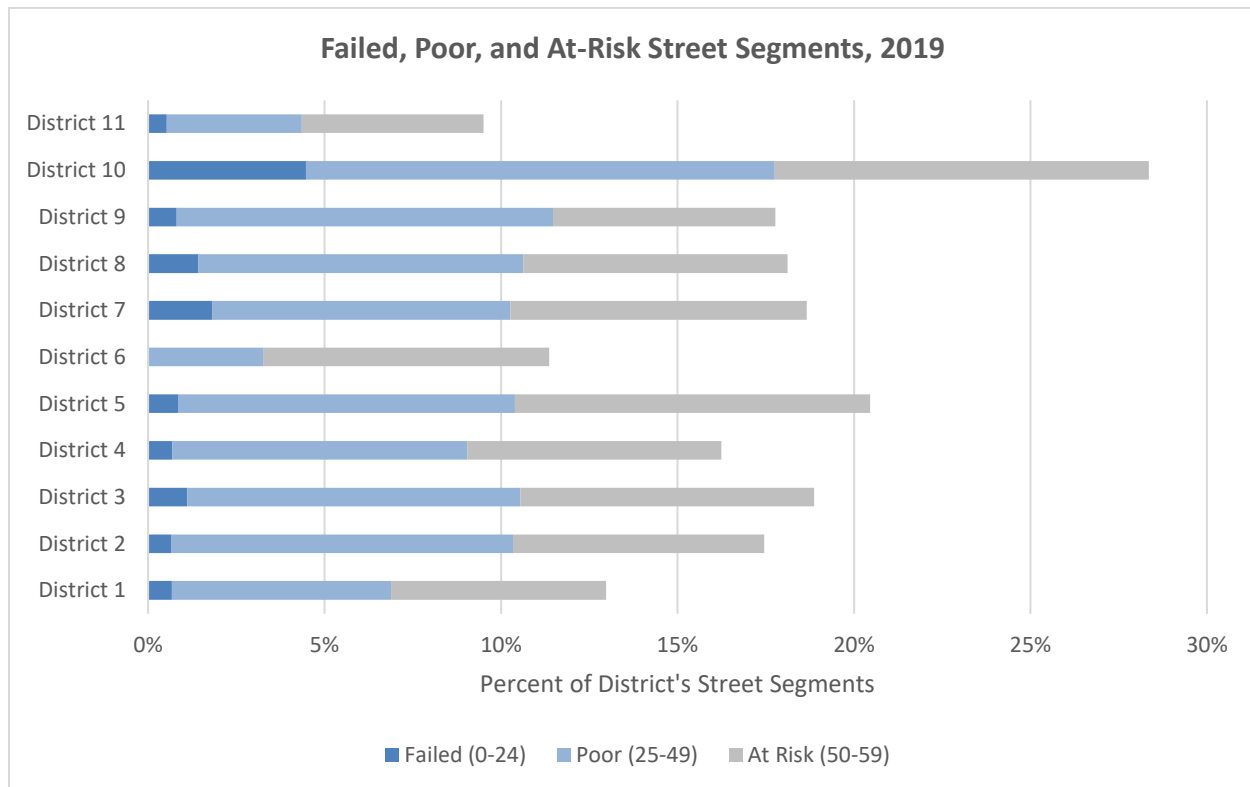
As shown in Exhibit 1.1 below, San Francisco’s overall Pavement Condition Index scores have improved in the past 10 years, and its 2019 PCI score of 74 is considered to be in “good” condition overall.

Exhibit 1.1: San Francisco Pavement Condition Index Scores, 2010 to 2019



Source: Metropolitan Transportation Commission *Vital Signs*

The overall pavement condition of the City’s streets varies across different neighborhoods. Exhibit 1.2 below displays the percentage of street segments by district that are in failed, poor, or at-risk condition. As shown in Exhibit 1.2, nearly 30 percent of District 10’s street segments are considered to be failed, poor, or at risk, and District 10 also has the highest percentage of failed street segments. In comparison, less than 10 percent of District 11’s street segments are considered to be failed, poor, or at risk, and District 6 has no failed street segments at all. Public Works staff note that the breakdown of functional classifications (usages) of street segments vary between districts, which may contribute to a disproportionate number of poorly rated street segments in some districts versus others. For example, a district may have a high number of street segments that carry a higher than average amount of traffic than others.

Exhibit 1.2: Percentage of District Street Segments in 2019 by PCI Score

Source: Department of Public Works

Note: PCI data for every street may not be collected every year for a variety of reasons such as ongoing construction projects. Inspection of pavement sections is only required every two years for arterial and collector routes, and every five years for residential streets.

Overall, the City's pavement condition improved from 2015 to 2019 and the number of street segments in the failed, poor, or at-risk categories decreased across nearly every supervisorial district, although at different rates. Exhibit 1.3 below shows the change in percentages of failed, poor, or at-risk street segments from 2015 to 2019 by supervisorial district. As shown below, the percentage of failed, poor, and at-risk street segments in District 10 decreased from 40 percent to 28 percent between 2015 and 2019. However, other districts with lower percentages of low-scoring street segments saw larger decreases over the five-year period. For example, District 11 saw a decrease from 30 percent to 10 percent from 2015 to 2019. As of 2019, District 10 remained the district with the highest percentage of failed, poor, or at-risk street segments. Nevertheless, it appears that the distribution of the worst street segments was more balanced in 2019 compared to 2015.

Exhibit 1.3: Change in Percentage of Failed, Poor, and At-Risk Segments, 2015 to 2019

	<u>Percent Failed, Poor, and At-Risk Segments</u>		
	2015	2019	Pct. Change
District 1	29%	13%	-16%
District 2	32%	17%	-15%
District 3	18%	19%	1%
District 4	29%	16%	-12%
District 5	28%	20%	-8%
District 6	13%	11%	-1%
District 7	32%	19%	-13%
District 8	28%	18%	-10%
District 9	26%	18%	-9%
District 10	40%	28%	-12%
District 11	30%	10%	-20%
Citywide	29%	18%	-11%

Source: Department of Public Works

Note: In 2017 the regional Metropolitan Transportation Commission revised how PCI scores are calculated to better reflect federal standards. The 2015 figures reflect the old calculation method.

Exhibit 1.4 below shows the change in percentages of very good/excellent street segments from 2015 to 2019 citywide and by supervisorial district. The overall increase in very good/excellent street segments was 19 percent from 37 percent in 2015 to 56 percent in 2019.

As shown in Exhibit 1.4, in addition to being the districts with the smallest decrease in poorly-rated streets, Districts 3 and 6 were the districts with the smallest increase in highly-rated streets.

Exhibit 1.4: Change in Percentage of Very Good/Excellent Segments, 2015 to 2019

Pct. Very Good/Excellent Segments			
	2015	2019	Pct. Change
District 1	39%	64%	25%
District 2	32%	57%	24%
District 3	49%	56%	7%
District 4	42%	59%	17%
District 5	38%	53%	15%
District 6	50%	56%	6%
District 7	31%	53%	22%
District 8	34%	55%	21%
District 9	42%	53%	11%
District 10	31%	53%	22%
District 11	31%	65%	34%
Citywide	37%	56%	19%

Source: Department of Public Works

Note: In 2017 the regional Metropolitan Transportation Commission revised how PCI scores are calculated to better reflect federal standards. The 2015 figures reflect the old calculation method.

Of the City's 12,952 street segments, very few (181, or 1.4 percent) were considered to be failed and in need of complete reconstruction according to 2019 PCI data. However, of those 181 failed street segments, 70, or 39 percent, were located in District 10, as shown in Exhibit 1.5 below.

Exhibit 1.5: Distribution of Failed Street Segments by District, 2019

	No. of Failed Segments	Pct. of Failed Segments
District 1	6	3%
District 2	7	4%
District 3	12	7%
District 4	7	4%
District 5	8	4%
District 6	0	0%
District 7	33	18%
District 8	19	10%
District 9	10	6%
District 10	70	39%
District 11	6	3%
<i>No District</i>	3	2%
Total	181	100%

Source: Department of Public Works

While the City's pavement condition has overall seen improvement between 2015 and 2019 (as previously mentioned, the number of street segments in the failed category decreased by 19 percent), the pavement condition continues to vary across different neighborhoods, and many

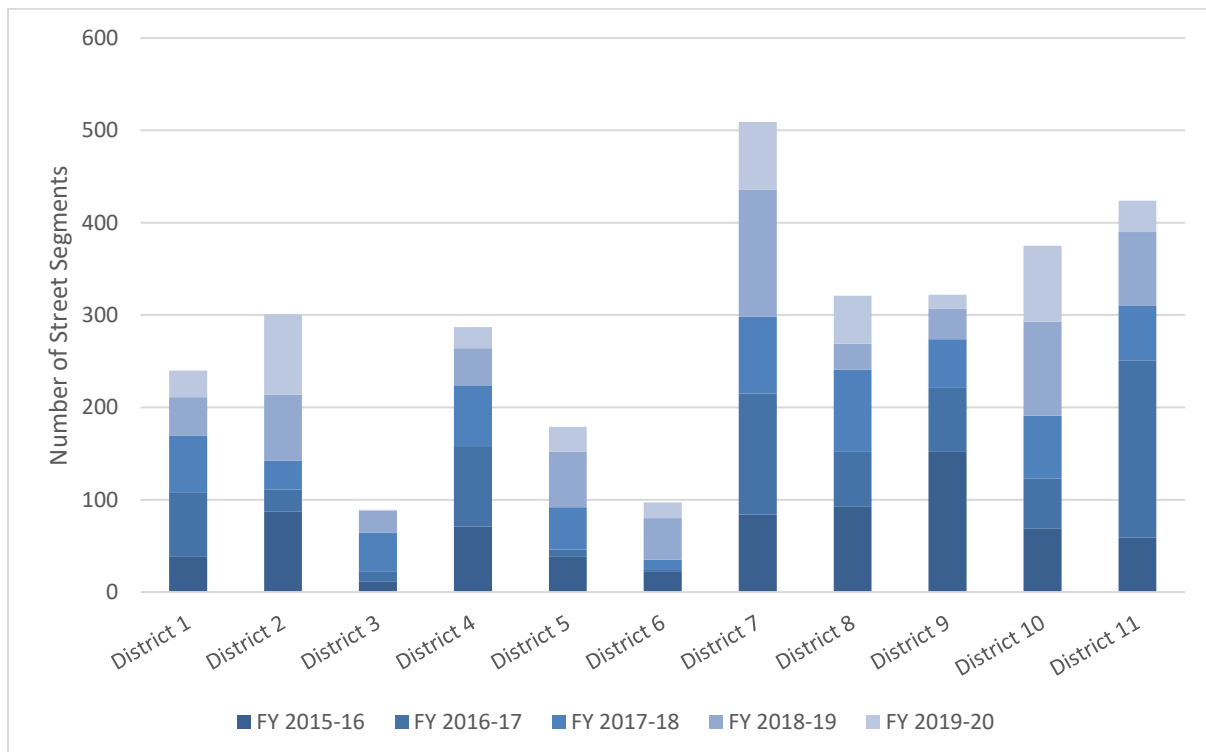
of the City's worst streets are concentrated in one area. However, this must be understood in the context that general industry best practice is to focus the majority of pavement management resources on keeping streets above the at-risk threshold (60-point PCI score). According to the Metropolitan Transportation Commission, the 60-point threshold is the point at which deterioration accelerates rapidly and the need for major rehabilitation becomes much more likely. Public Works staff have noted that if and when the City is able to raise its PCI score closer to a very good/excellent state (80-point PCI score), there should be more resources available to rehabilitate more of the poor and failed street segments.

Locations of street resurfacing projects and PCI improvements

The Street Resurfacing Program, within the Infrastructure Design and Construction Division of the Department of Public Works, manages and coordinates the City's street maintenance and resurfacing projects. The Street Resurfacing Program website states that the program considers the geographic distribution of services when planning street resurfacing projects, but also takes other factors into account (including street usage, funding availability, partnerships with other City agencies, project readiness, and pavement condition).

The number of street segments resurfaced between FY 2015-16 and FY 2019-20 by supervisorial district is shown in Exhibit 1.6 below.

Exhibit 1.6: Street Segments Resurfaced, FY 2015-16 to FY 2019-20

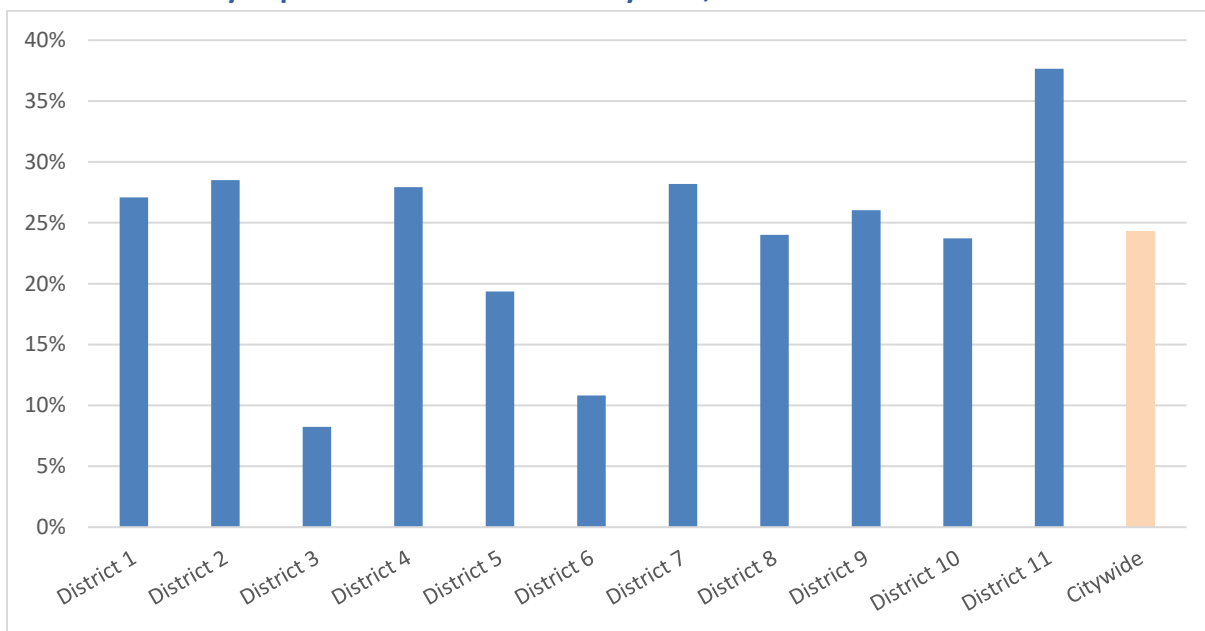


Source: Department of Public Works

As shown in Exhibit 1.6 above, over the five years between FY 2015-16 and FY 2019-20, District 7 had the highest number of street segments resurfaced, and Districts 3 and 6 had the lowest. Districts 3 and 6 are also the districts that saw the least changes in conditions of street segments during these five years (see Exhibits 1.3 and 1.4 above).

The number of street segments resurfaced as a percentage of each district's total street segments from FY 2015-16 to FY 2019-20 is shown in Exhibit 1.7 below. Exhibit 1.7 also shows the total citywide number of street segments resurfaced over these five years as a percent of the City's total number of street segments.

**Exhibit 1.7: Street Segments Resurfaced as a Percent of Total Street Segments
by Supervisorial District and Citywide, FY 2015-16 to FY 2019-20**



Source: Department of Public Works

As shown in Exhibit 1.7 above, the approximately 24 percent of the City's street segments were resurfaced in the five years between FY 2015-16 and FY 2019-20. The percent of each supervisorial district's street segments resurfaced during these five years ranged between eight percent in District 3 to 38 percent in District 11. Given that a newly resurfaced street has a lifecycle of about 15 to 20 years, a five year snapshot is not necessarily indicative of the long term efforts of the City to improve its street network, but does show where recent efforts have been spent.

Tracking improvement by district

Although the Street Resurfacing Program considers the equitable distribution of resurfacing projects across the City over a multi-year period, it does not track or report on PCI by supervisor district or City neighborhood. (The Program does monitor the total number of street segments resurfaced by district each year in PublicWorksStat, its internal performance monitoring and reporting tool). The City has established a citywide PCI score goal, but there is no established goal to measure improvement or track progress on the PCI scores of districts or different neighborhoods of the City.

As noted above, the Street Resurfacing Program website states that the program considers, among other factors, the equitable distribution of projects when scheduling streets for resurfacing work. In addition, the City's Performance Scorecards² track and report the City's overall Pavement Condition Index. However, neither the Street Resurfacing Program nor the City's Performance Scorecards establishes goals for, monitors, or reports on pavement conditions by City neighborhood or supervisorial district.

The Director of Public Works should establish goals to guide the distribution of street resurfacing and pavement resources and services across the City. In the absence of such goals and reporting, the Street Resurfacing Program is not held accountable for its stated equitable distribution consideration, and there is a risk that street resurfacing resources and benefits will concentrate in certain neighborhoods of the City.

Conclusion

Both the Street Resurfacing Program and the City's Ten-Year Capital Plan emphasize the importance of equity, including geographic equity, so that benefits of City improvements reach all residents of San Francisco. While the Department of Public Works monitors the number of resurfaced street segments throughout the City over a multi-year period, it has not established goals or measured performance for pavement condition index rating and/or pavement condition improvement by supervisorial district or neighborhood. As a result, although the overall condition of the City's streets has improved in the past 10 years, pavement condition continues to vary across different neighborhoods. Further, the Street Resurfacing Program does not work toward achieving and is not held accountable for any district- or neighborhood-specific goals.

² The San Francisco Performance Scorecards cover eight different service areas including public safety, public health, livability, safety net, transportation, environment, economy, and finance. Scorecard measures are quantitative indicators that provide the public and policy makers with information on specific services provided by the City.

Without established goals and reporting, there is a risk that street resurfacing resources and benefits may concentrate in certain neighborhoods of the City.

Recommendations

The Director of Public Works should:

- 1.1 Establish Pavement Condition Index, or other meaningful metric, goals for each supervisorial district or other meaningful geographic divisions of San Francisco and include this metric in both the Department's internal PublicWorksStat reports and the City's publicly reported Performance Scorecards. If pavement conditions are proposed to be measured other than by Pavement Condition Index score and/or by a geographic divisions other than supervisorial district, report to the Board of Supervisors on the formal metric and formal proposed boundaries for geographic divisions.

Benefits and Costs

Implementation of the proposed recommendation would improve the transparency and reporting of the activities of the Street Resurfacing Program as well as increase accountability for the Department of Public Works' stated consideration of equitable distribution of street resurfacing services. The proposed recommendation would require minimal staff time after initial establishment of the goals.

2. Pothole and Patch Paving Service Distribution and Performance Goals

The Bureau of Street and Sewer Repair has adopted a reactive approach to providing pothole and patch paving services in order to meet the Department of Public Works' performance goal of responding to 90 percent of San Francisco 311 pothole requests within 72 hours. While this performance metric measures the Department's responsiveness to the public, it does not necessarily align with the departmentwide priority of providing equitable and fair distribution of resources, because 311 report volumes are not evenly distributed across the City and do not always correspond to the overall condition of a district's streets. The Bureau has focused its delivery of pothole repair and patch paving services to meet its established performance goal; however, concentrating primarily on 311 calls creates the risk that the Department will focus its pothole repair and patch paving services on areas with high levels of reporting, rather than high levels of need. Prior to SF311, the Department of Public Works had a formal pothole sweep program. However, to address the high volume of 311 calls for pothole and patch paving services and meet the Department's performance goal, this formal pothole sweep program was halted, and the Department currently conducts only periodic ad-hoc pothole sweeps for major City-wide events and at the request of the Director's Office. As a result, there is a risk that supervisorial districts with higher volumes of 311 reports will receive larger shares of pothole and patch paving services than the existing pavement conditions warrant.

311 Pavement Defect Reports and Pothole Repair

The Department of Public Works' established performance goal of responding to 90 percent of received pothole requests within 72 hours may prevent full alignment with the departmentwide priority of providing an equitable and fair distribution of resources. The volume of public reporting of potholes and other pavement defects does not necessarily indicate the areas of the City with the highest need for pothole and patch paving services (measured by proxy as the Pavement Condition Index score), creating the risk that the Department could focus its pothole repair services on areas with high levels of reporting, rather than high levels of need.

The lifecycle of a city pothole and pothole repair goals

The Department of Public Works receives requests for roadway repairs from the general public through reports submitted via San Francisco 311 (311).¹ A 311 customer service agent reviews

¹ San Francisco's 311 Customer Service Center was launched in March 2007 as "the primary customer service center for the City of San Francisco." SF311.org is the centralized, official site for obtaining information, reporting non-

incoming 311 cases and assigns them to the appropriate City department and division to address. Potholes, pavement failures, street depressions, failed trenches, sinkholes, construction plate shifts, and other “street defects” are routed to the Department of Public Works’ Bureau of Street and Sewer Repair (BSSR). A BSSR dispatcher reviews these incoming 311 cases and conducts a secondary sorting to confirm completeness of the reported problem.

Before any repairs are made, BSSR sends an inspector to evaluate the reported damage and diagnose a fix. The inspector determines agency responsibility and the funding source for the repair. If a more extensive street repair is necessary (for example, to address major base failure or a large area of pavement failure), the case will be forwarded to the Department of Public Works’ Street Resurfacing Program.² If the inspector determines that the damage is the responsibility of another entity, such as the San Francisco Public Utilities Commission, a temporary “make safe” repair is made and the service request is transferred to the responsible agency. If the defect falls under BSSR’s responsibility, a BSSR pothole or patch paving crew will be dispatched to the area to make the repair.

One of the metrics established in the City’s Livability Performance Scorecard³ is for the Department of Public Works to respond to 90 percent of received pothole service requests within 72 hours.⁴ The clock starts when BSSR receives the 311 request and ends once that service order is marked as “Resolved” in the Computerized Maintenance Management System (CMMS), which is the asset management system in place at the Department of Public Works that tracks service orders and maintenance activities. According to the Annual Performance Results reported by the Controller’s Office, the Department of Public Works met or exceeded its goal of responding to 90 percent of pothole service requests within 72 hours in FY 2016-17, FY 2017-18, and FY 2018-19. Although the Controller’s Office has not yet issued a report on the Annual Performance Results for FY 2019-20, the online City Performance Dashboard for pothole response shows that the Department is currently still meeting its goal of responding to 90 percent of pothole service requests within 72 hours as of April 2021.

emergency problems, and submitting service requests. Requests may be submitted via phone, web, mobile, and Twitter.

² The Pothole and Patch Paving Team under BSSR provides shorter-term repairs to street defects, while the Street Resurfacing Program under the Public Works Bureau of Infrastructure Design and Construction preserves, resurfaces, and reconstructs City blocks to improve the City’s overall pavement condition.

³ The San Francisco Performance Scorecards cover eight different service areas including public safety, public health, livability, safety net, transportation, environment, economy, and finance. Scorecard measures are quantitative indicators that provide the public and policy makers with information on specific services provided by the City.

⁴ This goal is evaluated monthly by calculating the number of requests responded to within three business days divided by the total number of requests received that month. BSSR has consistently met this monthly goal over the past five years, according to the Pothole Response measurement of the City Performance Scorecard.

Uneven geographic distribution of 311 cases

The established performance metric of responding to all 311 pothole reports within 72 hours measures the Department's responsiveness to the public. However, because 311 report volumes are not evenly distributed across the City and may not always correspond to the overall condition of a district's streets, it increases the risk that the Department will focus its pothole repair services on areas with high levels of reporting, rather than high levels of need.

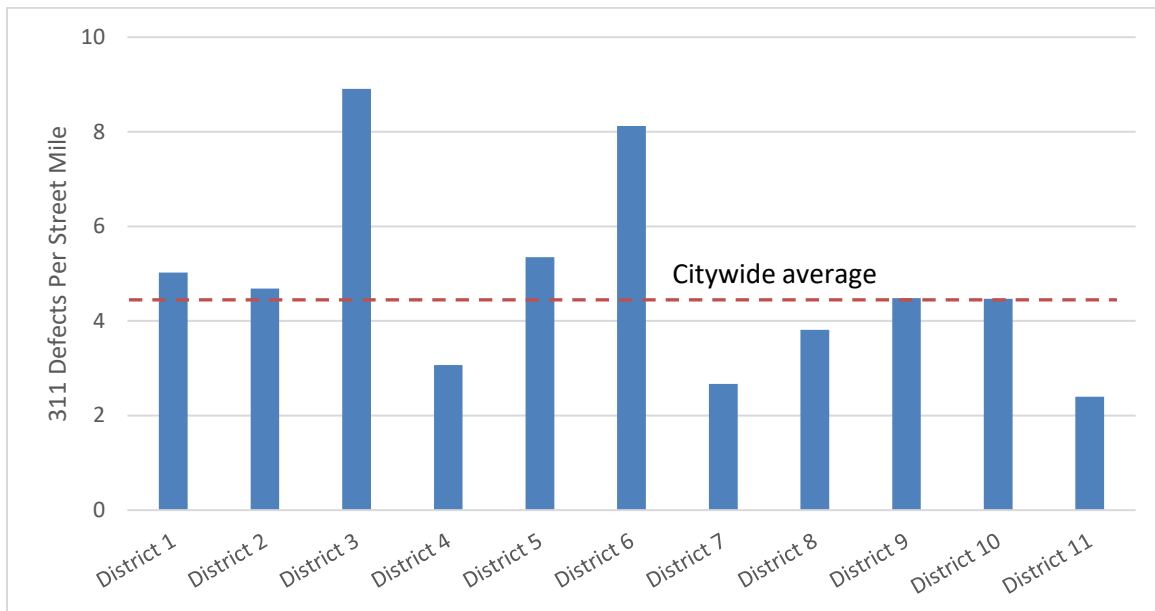
The geographic distribution of BSSR's 311 street defect cases⁵ is not even across the City, even after accounting for differences in district size. Exhibit 2.1 below shows the five-year average (FY 2015-16 to FY 2019-20) of 311 pavement defect cases per street mile⁶ that were opened and assigned to BSSR, by supervisorial district, compared with the citywide average. The comparison was done per street mile within a district to account for differences in district size. (Throughout this section, the number of street miles within a district refers to the total miles of accepted streets⁷ maintained by the Department of Public Works). Overall, Districts 3 and 6 had more 311 pavement defect cases opened per street mile during the five-year period than the citywide average, while Districts 4, 7, and 11 had fewer cases than the citywide average.

⁵ As noted above, not all 311 street defect reports are specifically related to potholes, and 311 street defect reports may have different levels of severity and require different amounts of labor or funding to address. In addition, one 311 report may require multiple repairs (for example, if a reported site has more than one pothole), and there may be more than one 311 report of the same defect (for example, multiple reports of one pothole).

⁶ The comparison by street mile is intended to account for variations in district size. However, street miles do not account for streets with more than two lanes. Pavement deteriorates at different rates depending on a variety of factors, including the type of street and heavy traffic.

⁷ "Accepted streets" refers to streets that meet the City's minimum infrastructure requirements for roadways and have been incorporated into the public right-of-way.

Exhibit 2.1: 311 Pavement Defect Cases Opened and Assigned to BSSR per Street Mile, Five-Year Average (FY 2015-16 to FY 2019-20)



Source: DataSF (311 case data [filters applied: fiscal year; category “street defects” and request type “pavement defects”, responsible agency “DPW BSSR Queue” and “DPW – Bureau of Street and Sewer Repair”]); BSSR (street miles per district).

Notes: The count of 311 cases contains duplicate requests (for example, multiple reports of one pothole). Defects with no supervisory district recorded are not shown but are included in the citywide average. The number of street miles per district is as of December 2020.

As shown in Exhibit 2.1 above, District 3 has the highest five-year average of BSSR-assigned 311 pavement defect cases per street mile (8.9), which is nearly double the citywide average (4.5) and more than three times as many as District 11 (2.4).

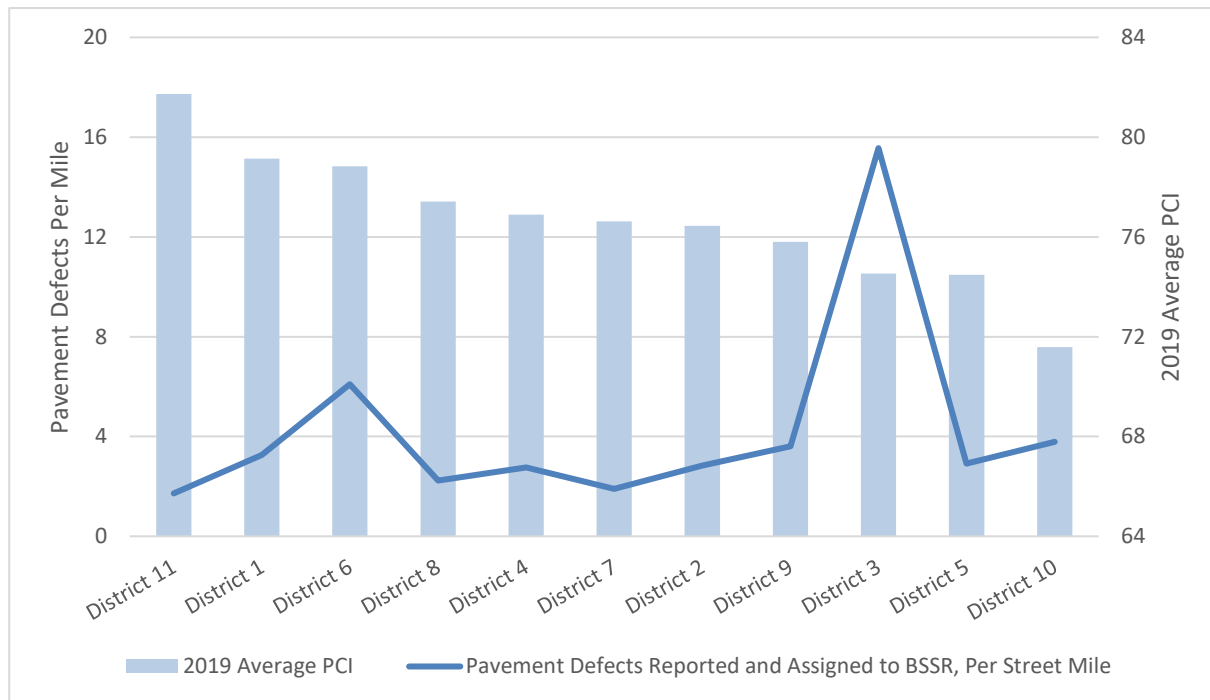
Reports of pavement defects do not correspond to Pavement Condition Index score

Districts with high volumes of pavement defect cases do not necessarily have worse pavement condition, as measured by the average Pavement Condition Index (PCI) score of a district’s streets. PCI is a standardized rating of road conditions on a scale from 0-100: a PCI score of 85-100 is rated as “excellent,” 70-84 as “good,” 50-69 as “at-risk,” 25-49 as “poor,” and 0-24 as “very poor.”⁸ As shown in Exhibit 2.2 below, there is not a consistent relationship between the average

⁸ Pavement Condition Index scores are not tracked by supervisory district. The figure reported in this section, average PCI score of a district’s street segments, is calculating using a straight average of the PCI score of all the individual street segments within a district, but does not indicate the true PCI of a district because the calculation does not account for street segments with different areas. However, it is used in this section as a proxy for overall pavement condition within a district.

PCI score of a district's street segments and the number of reported street defects. Districts with high volumes of reported pavement defects (for example, District 3) do not necessarily have a lower PCI score than districts with lower volumes of reported pavement defects. In fact, two districts with very similar 2019 PCI scores, District 3 and District 5, had very different volumes of reported pavement defects per mile in FY 2019-20. If 311 reports of pavement defects were a reliable indicator of street condition, one would expect a consistent inverse relationship (i.e., that more 311 requests per street mile would indicate poorer pavement condition).

Exhibit 2.2: FY 2019-20 Pavement Defect Reports and 2019 PCI Score



Source: DataSF (311 case data [filters applied: fiscal year; category “street defects” and request type “pavement defects”, responsible agency “DPW BSSR Queue” and “DPW – Bureau of Street and Sewer Repair”]); BSSR (street miles per district); Street Resurfacing Program (Pavement Condition Index scores).

Note: District PCI calculated as the unweighted average PCI of all street sections within a supervisorial district in 2019; it does not represent the actual PCI of a district. PCI data for every street may not be updated every year (inspection of pavement sections is only required every two to five years depending on the type of street).

Geographic Distribution of Pothole and Patch Paving Services

The volume of pothole repair and patch paving services that each supervisorial district receives varies across districts and across years, even after accounting for variations in a district's street miles, as shown in Exhibits 2.3 and 2.4 below.

Exhibit 2.3: Potholes Repaired by BSSR, per Street Mile



Over the five years from FY 2015-16 to FY 2019-20, Districts 6 and 10 consistently have the highest number of pothole repairs per street mile performed by BSSR.

Exhibit 2.4: Patch Paving and Void/Depression Paving by BSSR, Square Feet per Street Mile



Similar to the pothole repair comparisons, over the five years from FY 2015-16 to FY 2019-20, Districts 6 and 10 tend to consistently have the highest square footage of patch paving and void/depression paving repairs performed by BSSR.

More 311 reporting corresponds to higher service volumes

When comparing among districts with similar pavement condition index scores, the districts with high volumes of 311 pavement defect reports tend to receive higher volumes of services. For example, as shown in Exhibit 2.5 below, among the three districts with the highest average 2019 pavement scores (with an average PCI of all street sections between 79 and 82), District 6 had the highest volume of 311 street defects reported per street mile and also received the highest volume of pothole repairs and paving in FY 2019-20.

Exhibit 2.5: Pothole and Patch Paving Services in Higher PCI (79 to 82) Districts

Per street mile, FY 2019-20			
	311 Pavement Defects	Potholes Repaired	Patch and Void/Depression Paved, Sq. Ft.
District 11	2.4	4.7	65.8
District 1	5.0	9.0	93.0
District 6	8.1	11.9	202.7

Source: Public Works Street Resurfacing Program (Pavement Condition Index); BSSR service order database (potholes and square feet repaired); DataSF (311 pavement defects reported); BSSR (street miles per district).

Note: District PCI calculated as the unweighted average PCI of all street sections within a supervisorial district. PCI data for every street may not be updated every year (inspection of pavement sections is only required every two to five years depending on the type of street).

Among the four districts with the lowest average 2019 pavement scores (with an average PCI of all street sections between 72 and 76), District 10 has the lowest PCI and also received the highest volume of services per street mile, as shown in Exhibit 2.6 below. However, excluding District 10, the district that received the highest volume of services per street mile was District 3, which also had the highest volume of 311 street defects reported per street mile.

Exhibit 2.6: Pothole and Patch Paving Services in Lower PCI (72 to 76) Districts

Per street mile, FY 2019-20			
	311 Pavement Defects	Potholes Repaired	Patch and Void/Depression Paved, Sq. Ft.
District 9	4.5	5.6	156.7
District 3	8.9	10.7	184.6
District 5	5.3	10.1	110.9
<i>District 10</i>	<i>4.5</i>	<i>16.6</i>	<i>303.5</i>

Source: Public Works Street Resurfacing Program (Pavement Condition Index); BSSR service order database (potholes and square feet repaired); DataSF (pavement defects reported); BSSR (street miles per district).

Note: District PCI calculated as the unweighted average PCI of all street sections within a supervisorial district. PCI data for every street may not be updated every year (inspection of pavement sections is only required every two to five years depending on the type of street).

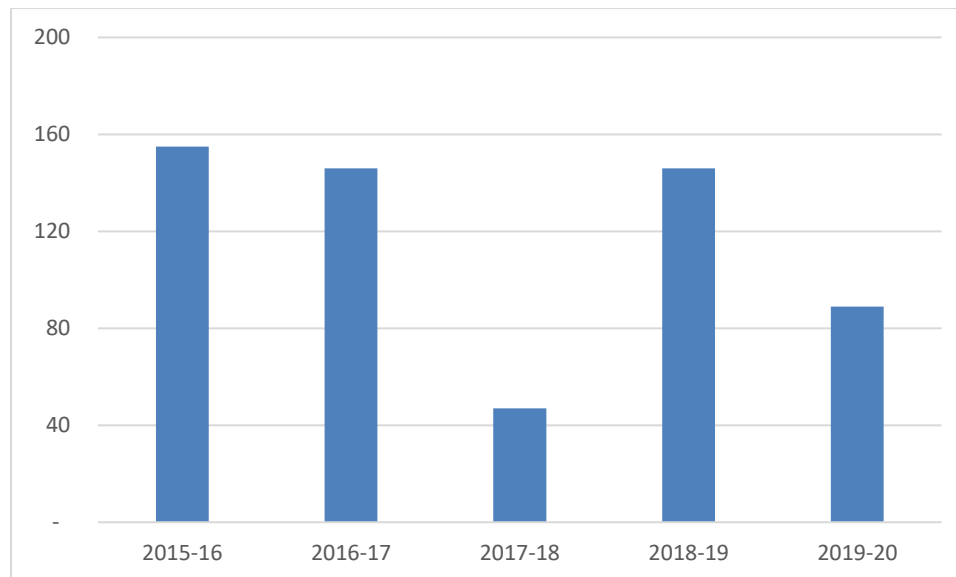
Overall, Districts 3 and 6 received more 311 pavement defect reports per street mile and also, in many cases, received higher volumes of services when compared to other districts with comparable pavement condition. However, as discussed in the next section, the Department of Public Works carries out pothole sweeps before large City events like parades down Market Street or the Chinese New Year's Parade, which may also contribute to the higher volumes of services provided to Districts 3 and 6.

Proactive Corrective Pothole Sweeps Program Halted

The Department of Public Works has halted its formal proactive pothole sweep program, in which two pothole crews would drive the City streets when the volume of services requests was low and fill any pothole that the crews came across. The crews rotate through each supervisorial district to make systematic pothole and patch paving repairs, prioritizing major arterial roads first. The proactive district-by-district sweep program was halted soon after the launch of 311 in order to focus on the Department's response to 311 calls for service from the public.

The Department still conducts some ad hoc proactive pothole and patch paving repairs, but not systematically. Currently, the proactive ad hoc pothole sweeps are conducted for major City-wide events, such as the Chinese New Year's Parade and Pride, and at the request of the Director's Office or the Bureau of Infrastructure Design and Construction.⁹ In addition, if a repair crew encounters a hazardous condition en route from one location to another, the crew will repair the hazard. However, these proactive activities are not conducted regularly or systematically. As shown in Exhibit 2.7 below, BSSR has conducted between 47 and 155 sweeps annually between FY 2015-16 and FY 2019-20.

Exhibit 2.7: Resolved Proactive Sweeps Conducted by BSSR, FY 2015-16 to FY 2019-20



Source: BSSR database query, filtered to include only "Resolved" service orders.

Through these proactive sweeps, BSSR has repaired between 621 and 2,095 potholes annually and paved between 201 square feet and 1,130 square feet of voids/depressions annually¹⁰

⁹ The Street Resurfacing Program (under the Bureau of Infrastructure Design and Construction) receives pothole inquiries from various agencies, offices, and stakeholders and triages pothole-related inquiries to BSSR.

¹⁰ Counting resolved service orders only.

between FY 2015-16 and FY 2019-20. Potholes repaired during proactive sweeps represented between four and 16 percent of all potholes repaired during a fiscal year, and depression/void square footage repaired represented between zero and three percent of all depression/void square footage repaired.

Alternative Performance Measures

BSSR does not track the geographic distribution of its pothole and patch paving repairs throughout the City and does not have explicit geographic equity goals or service area performance metrics in place, unlike other City departments and Public Works programs. The manager of the BSSR pothole and patch paving team tracks the monthly volume and status (open/closed) of 311 street defect requests and the percentage responded to within three days via PublicWorksStat, the Department's internal performance measurement dashboard. However, PublicWorksStat does not report on the distribution of repairs across the City.

As stated earlier in this section, BSSR has met or exceeded its established goal of responding to 90 percent of incoming 311 cases within 72 hours over the past several fiscal years. Department staff is unsure of the exact origin of the response metric, which has been used for evaluation since the launch of PublicWorksStat (formerly known as DPWStat) in 2010. The 72-hour response time is not mandated by law; it is an internal and public commitment similar to what has been adopted by some other public works departments around the country.¹¹ However, meeting this goal of timely response does not mean that the entire City is equally served by pothole repair and patch paving services.

While BSSR does not include geographic equity as a goal for its pothole repair operations, the Department's Street Resurfacing Team explicitly does: "Geographic equity is monitored to ensure that resurfacing projects are distributed to all neighborhoods and commercial districts of the City." Other Bay Area cities, including Oakland and San Jose, have also incorporated geographic equity into their paving and pothole repair plans.

Conclusion

The Department of Public Works relies primarily on public reporting of pavement defects to guide the activities of its pothole and patch paving program and to measure its performance. While responsiveness to public reporting is an important part of the Department of Public Works' service, because 311 reports may not necessarily reflect the overall pavement condition and need

¹¹ For example, Chicago and Seattle both commit to a 72-hour response time to pothole reports, while Oakland says it will respond "within a reasonable time frame."

of a City neighborhood, there is a risk that areas of the City with high levels of reporting, rather than high levels of need, will receive more of the Department's pothole repair and patch paving services. The Bureau of Street and Sewer Repair should continue to respond to public requests for service, but consider additional performance metrics and a resumption of its proactive sweep program as well to ensure that its service distribution remains balanced across the City.

Recommendations

The Superintendent of the Bureau of Street and Sewer Repair should:

- 2.1 Track and monitor the supervisorial districts or other meaningful geographic divisions of San Francisco in which pothole and patch paving repairs are made in PublicWorksStat reports beginning no later than July 1, 2022. If pothole and patch paving repairs are proposed to be tracked by geographic divisions other than supervisorial district, report to the Board of Supervisors on the formal proposed boundaries of the geographic divisions for approval.
- 2.2 Define and adopt geographic equity considerations or goals for pothole repair and patch paving services, so that 311 requests are not the only driver of BSSR's pothole repair and patch paving services no later than July 1, 2022.
- 2.3 As a pilot, consider re-instituting proactive pothole sweeps to assess the impact, if any, on BSSR's response time to 311 requests and the overall distribution of pothole repair and patch paving services. Further, report back to the Board of Supervisors' Government Audit and Oversight Committee no later than June 30, 2022 on (a) future plans for use of proactive pothole sweeps, (b) the impacts to BSSR's response time with the use of proactive pothole sweeps, and (c) whether funding requirements are needed to meet both the responsiveness goal and proactive sweep recommendation.

Benefits and Costs

Implementation of the recommendations 2.1 and 2.2 would not require significant staff or financial resources and would improve the service delivery goals of the Bureau of Street Resurfacing and Repair. The proposed pilot program in recommendation 2.3 may require re-distribution or re-assignment of existing pothole and patch paving crews. With recent decreases in funding for the pothole program, dedicating crew members to proactive sweeps rather than 311 calls may decrease BSSR's overall 311 pothole response time; however, given that BSSR consistently exceeds its response time performance measure, the program may be able to pilot the proactive sweep program and continue to meet its existing performance measure.

3. Street Resurfacing Change Order Review Process

Recent updates to controls over the Department of Public Works' construction procurement activities have not been formalized or integrated into the City's existing procurement workflows. In June 2020, at the recommendation of the City Controller, the Mayor formally changed the designation of the individual who may act as the Mayor's designee in various approval actions related to contracting functions of the Department of Public Works from the Director of the Department of Public Works to the Acting Director of the Office of Contract Administration and City Purchaser. However, the Office of Contract Administration's contract approval actions have not been fully integrated into a common contract review and approval system used by both the Department of Public Works and the Office of Contract Administration. Instead, contract review and approval actions are routed between Public Works and Contract Administration via email and DocuSign envelope. In addition, the Office of Contract Administration has not established written guidelines governing its review process or grounds for modification or rejection. Overall, the lack of guidelines and software integration puts the process at risk of inconsistent or incomplete reviews and reduces transparency.

New Review Process Lacks Documentation, Formal Guidelines

Recent changes to the oversight and controls over certain construction contracting actions of the Department of Public Works have not been fully integrated into the City's official procurement workflow system. Although the Office of Contract Administration (OCA) and the Department of Public Works have a current workflow system in place, the OCA has not developed written guidelines or an independent review document governing its role in reviewing certain Department of Public Works construction contracting actions and has not specified grounds for rejection or non-approval of contract changes.

Designation of contract review authority

Chapter 6 of San Francisco's Administrative Code describes the City's Public Works contracting policies and procedures and gives the Department of Public Works authority over construction procurement. As a Department without a Board or Commission, Chapter 6 requires that the Mayor or the Mayor's designee approve certain aspects of the Department of Public Works' construction contracting process, including change orders to contracts in certain situations.

Prior to June 29, 2020, the Mayor had designated the Director of the Department of Public Works as the Mayor's designee to act on behalf of the Mayor in various approval actions related to the functions of the Public Works Department and its contracting processes. On June 29, 2020 the Controller's Office issued a Public Integrity Review Preliminary Assessment of San Francisco

Public Works contracting and recommended that the Mayor delegate this responsibility to an official other than the Department Director. Accordingly, on June 29, 2020, the Mayor formally designated the Acting Director of the Office of Contract Administration and City Purchaser, by name, as the individual to serve as the Mayor's designee for purposes of implementing applicable provisions of Chapter 6 of the San Francisco Administrative Code.

Proposition B, approved by San Francisco voters in November 2020, will establish a Public Works Commission by 2022.¹ This Commission will assume contract approval authority once it is established. In the interim, consistent with the Controller's recommendation, the Acting Director and City Purchaser is responsible for approving construction contract change orders that meet the following criteria:²

- Any alteration or modification to a construction contract that would cumulatively increase or decrease the contract price in excess of 10 percent of the original contract price or scope; and
- Any alteration or modification to a construction contract that would cumulatively extend the time for completion of the work in excess of 10 percent of the original contract duration.

Incomplete inter-department software integration

The Office of Contract Administration and the Department of Public Work have not agreed upon a common system to manage approval actions related to OCA's approval of Department of Public Works construction contract actions. OCA uses a contract review and approval system managed by the Department of Technology called the "Contract Approval Request tool," and OCA states that it has requested that the Department of Public works begin utilizing this system for routing Chapter 6 contracts to OCA for approval in order to ensure consistency in the City's contract review process and to increase transparency and reporting capabilities. However, the Department of Public Works states that it does not have the resources to support and implement use of the Contract Approval Request tool, and that it is working on allowing OCA to access the existing Public Works system instead.³ As a result, Public Works contract actions that require

¹ In November 2020 San Francisco voters approved Proposition B, which amends the City Charter to create the Department of Sanitation and Streets to assume certain related duties which are currently under the purview of the Department of Public Works. Proposition B also establishes oversight commissions for the Department of Public Works and the newly created Department of Sanitation and Streets. Appointments to the Public Works Commission will be made either by June 1, 2022 or by an earlier date established by the Board of Supervisors. The terms of the Commission members will begin 31 days after appointments are made, and the Commission will hold its inaugural meeting no later than three months after the terms of the initial members begin.

² Administrative Code § 6.22(h).

³ The audit team did not validate or verify the assertions of either OCA or the Department of Public Works related to the Contract Approval Request tool.

Office of Contract Administration review and approval under the June 29, 2020 designation are routed from the Department of Public Works Finance and Administration team to the Acting Director of the Office of Contract Administration via email and a DocuSign envelope: all questions from the Office of Contract Administration regarding the substance of the contracts under review, including requests for more information, are relayed and answered through email messages, and the final approval of the contracts is recorded in a DocuSign envelope.

Conducting these review and approval actions over email creates risks of delays and inconsistency associated with potential absence or turnover in the Acting Director position, because the Mayor's designee is designated by name in the June 29, 2020 letter, and decreases the transparency and traceability of the Office of Contract Administration's review process. Fully integrating the Office of Contract Administration's review into a shared contract action management tool would minimize these risks. OCA, with the Department of Technology's support, has updated its existing Contract Approval Request tool to allow the Department of Public Works to route its Chapter 6 contracts to OCA; however, as stated above, the Department of Public Works states that it does not have the resources to support and implement use of the Contract Approval Request tool, and has not been trained on its use.

Lack of independent review checklist and written guidelines

The Office of Contract Administration has not developed written guidelines governing the review of Department of Public Works construction change order actions and has not specified grounds for rejection or non-approval of contract changes. The current review process does not have a review checklist developed independent of the Department of Public Works.

In the June 29, 2020 letter that formally named the Acting Director of the Office of Contract Administration and City Purchaser as the Mayor's designee for these approval actions, the Mayor requested that the City Attorney and City Controller provide the Mayor's designee with advice and counsel prior to the issuance of written guidelines governing the review process. According to OCA, in March of 2021 the Office of Contract Administration drafted a proposal for approval considerations and recommendations regarding further delegation of approval authority for the various Chapter 6 contract types. As of April 2021, OCA has not issued formal written guidelines that govern the review process, or specified grounds for rejection or non-approval of requested actions.

Currently, the Department of Public Works provides the Office of Contract Administration with a completed Construction Change Order Review Checklist, which was developed by the Department of Public Works in coordination with OCA, and supporting documentation when submitting change order actions for approval. The Construction Change Order Review Checklist contains the following information:

- Contract information from PeopleSoft (contract name, number, project manager, awarding authority, initial contract award amount, and duration)
- Change order information (change order number, request date, dollar amount of change, and modified total contract amount and duration, as well as all prior change order information)
- Contract administration review information (whether the contract insurance is current, whether the contractor's license is valid, and whether the cumulative change orders exceed 10 and/or 20 percent of the original contract value)

The Construction Change Order Checklist contains the name of the Public Works project manager who is recommending the contract amendment but does not specifically indicate whether the Department has verified or validated the change order costs.⁴ During the Office of Contract Administration's review of contract actions, the Mayor's designee may follow up with the Department of Public Works to clarify or validate elements of the contract action, including whether the cost of the change order was validated by the Department's internal engineers. However, this cost validation is not systematically included in the department-provided Construction Change Order Review Checklist and is therefore not guaranteed to be systematically reviewed by the Office of Contract Administration.

Conclusion

The Office of Contract Administration is the entity that currently has final authority to review and approve certain Department of Public Works construction contracts actions and modifications. However, the review and approval process occurs outside of the Office of Contract Administration's Contract Approval Request tool and is not conducted according to written guidelines that govern the review process or with an independently-developed construction contract review checklist. The lack of formal guidelines, an independently-developed checklist, and full integration into the City's existing workflow puts the review process at risk of inconsistent and incomplete reviews and reduces the transparency of the process. Establishing written guidelines and its own review checklist will strengthen the Office of Contract Administration review process until the formal establishment of the Department of Public Works oversight commission.

⁴ According to the Department of Public Works, staff review, validate, and approve proposed change orders in the Department's internal system, which occurs before routing to OCA for approval.

Recommendations

The City Purchaser should:

- 3.1 Establish written guidelines that govern its review process for DPW contracts based on applicable provisions of Chapter 6 of the San Francisco Administrative Code, with input from construction management experts. These guidelines should specify grounds for delaying, modifying, or rejecting change orders and other contract actions.
- 3.2 Develop a process document for change order review in consultation with individuals with construction management expertise and revise the Construction Change Order Review checklist that was developed by the Department of Public Works to conform to Office of Contract Administration criteria, including the Department's internal evaluation of contractor estimates of change order costs.
- 3.3 Request that the designation of Mayor's designee be revised by the Mayor to remove "Sailaja Kurella" specifically by name, and instead name the "Director or Acting Director of the Office of Contract Administration and City Purchaser."

The Director of the Department of Public Works should:

- 3.4 Work with the Office of Contract Administration, City Purchaser, and City Administrator to agree upon and implement a common contract approval information system or tool to track the City Purchaser's approval actions.

Benefits and Costs

Implementation of the proposed recommendations would not require significant staff or financial resources and would improve the controls, transparency, and completeness of the Office of Contract Administration's mandatory review functions.

4. Funding Sustainability for Street Resurfacing

The COVID-19 pandemic has hampered the City's ongoing improvements to pavement condition, and the Street Resurfacing Program faces an uncertain funding future due to a variety of fiscal restraints and reductions resulting from the COVID-19 pandemic. FY 2019-20 was the first year since at least FY 2015-16 that the City did not meet its goal of paving or preserving 500 City street blocks. In addition, reductions to the City's Pay-Go Program, which provides General Fund support to street resurfacing, will require the City to issue debt in order to continue financing street resurfacing projects and meeting its pavement condition goal.

Anticipated Funding Reductions

The City's Street Resurfacing Program faces an uncertain funding future due to a variety of fiscal restraints and reductions resulting from the COVID-19 pandemic. The Street Resurfacing Program depends on revenues from multiple state, local, and federal source, including the City's General Fund, the state gas tax, state and federal grants, and other local sources (local propositions and bond measures). During FY 2017-18, FY 2018-19, and FY 2019-20, the Department of Public Works spent between approximately \$50.7 million and \$77.3 million on street resurfacing (not including pothole/patch paving) annually from various funding sources, as shown in Exhibit 4.1 below.

Exhibit 4.1: Public Works Street Resurfacing Annual Expenditures by Funding Source

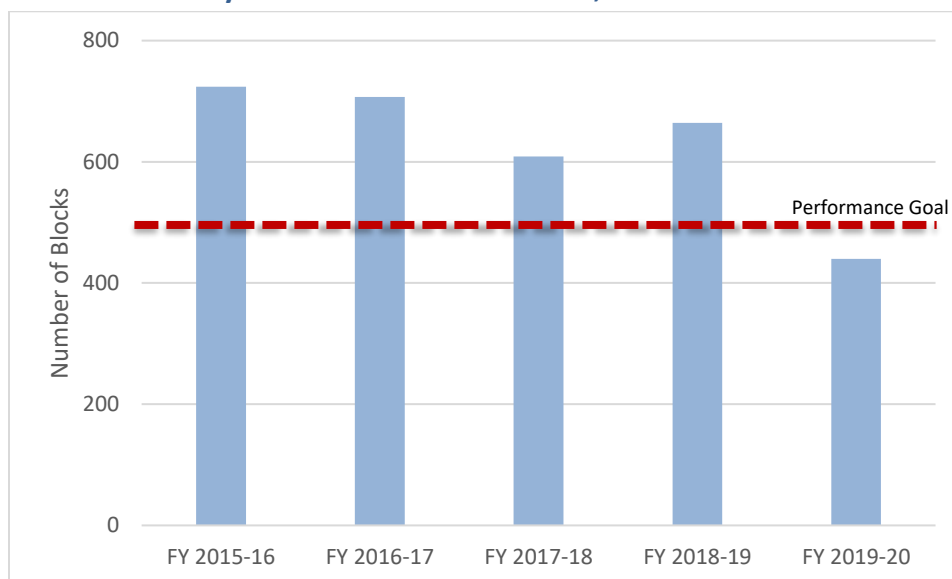
Fund	FY 2017-18	FY 2018-19	FY 2019-20
General Fund	\$48,594,302	\$ 49,984,946	\$ 21,911,668
Gas Tax HUTA	7,943,309	6,004,007	4,393,629
Gas Tax RMRA	728	4,200,203	15,584,275
Federal Grant	6,162	5,788	-
State Grant	-	25,328	1,122,976
Prop K/AA Local Grant	6,336,289	6,087,634	6,365,360
Local (GO Bond)	14,379,613	5,027,181	1,308,684
Total Expenditures	\$77,260,404	\$71,335,086	\$50,686,591

Source: Peoplesoft

Notes: **Gas Tax HUTA** is the Highway Users Tax Account, which is the local portions of the per-gallon excise taxes on gasoline and diesel fuel and registration taxes on motor vehicles. **Gas Tax RMRA** is the Road Maintenance and Rehabilitation Account, which allocates much of the revenue from the Road Repair and Accountability Act of 2017. **Local (GO Bond)** are funds from the Road Repaving and Street Safety General Obligation bond passed by voters in November 2011.

As shown in Exhibit 4.1 above, the decrease in expenditures in FY 2019-20 was mostly due to the reduction of General Fund support for road resurfacing to account for a sharp reduction in citywide General Fund revenues in that year. In that same year, as shown in Exhibit 4.2 below, the City did not meet its goal of paving or preserving 500 or more street blocks.

Exhibit 4.2: City Blocks Paved or Preserved, FY 2015-16 to FY 2019-20



Source: Street Resurfacing Program

The Ten-Year Capital Plan recommends funding the Street Resurfacing Program at a level sufficient to maintain a Pavement Condition Index (PCI)¹ score of 75; however, the proposed funding levels in the FY 2022-31 Capital Plan are only sufficient to maintain a PCI score of 74 over the 10 years of the plan. The FY 2022-31 Capital Plan also anticipates the issuance of \$60 million in Certificates of Participation to finance street resurfacing projects to fill the funding gap arising from a reduction in General Fund revenue due to the COVID-19 pandemic (in previous capital plans, street resurfacing activities have been funded entirely by the City's pay-as-you-go program, rather than debt issuances).

The Street Resurfacing Program also depends significantly on gasoline tax revenue from the state. According to a September 2020 report from the Legislative Analyst's Office,² reductions in economic activity, stay-at-home orders, and increases in telecommuting have all reduced driving in the state, and accordingly the state has experienced a significant reduction in gasoline and other tax revenues that support funding for local streets and roads. The state directly distributes a portion of these transportation revenues to cities and counties for local streets and roads

¹ The Pavement Condition Index (PCI) metric is a numeric rating of road conditions on a scale of 0 to 100.

² The Legislative Analyst's Office provides fiscal and policy advice to the California State Legislature.

purposes. Depending on California's recovery from the COVID-19 pandemic, the City may receive less or variable funding from the state than anticipated, which may further restrict funding levels for the Street Resurfacing Program.

Conclusion

The COVID-19 pandemic has restricted state and local revenue sources for street resurfacing projects. As a result, the City is not projected to meet the established Capital Plan goal of achieving a PCI score of 75 and did not meet its FY 2019-20 goal to pave 500 street blocks annually. Although the proposed funding in the FY 2022-31 Ten-Year Capital Plan is expected to maintain pavement condition at a stable level in future years, ongoing maintenance of the City's roads will depend on these ongoing revenue sources, which may be further impacted by COVID-19.

Recommendations

The Director of Public Works should:

- 4.1 Prepare an action plan to be provided to the City Administrator and Board of Supervisors that includes strategies for ensuring that the City obtains sufficient funding to meet its road resurfacing goals.

Benefits and Costs

Implementation of the proposed recommendation would provide a transparent plan for obtaining adequate street resurfacing funding. The proposed action plan would require a small amount of administrative staff time.

5. StreetTreeSF Baseline Pruning Progress

StreetTreeSF is not on track to meet its initial program goal of completing the recommended maintenance and removal of priority street trees in the first three to five years of the StreetTreeSF program. Through November 2020, only 45 percent of the City’s highest priority trees have been addressed by its block pruning schedule. StreetTreeSF management’s current projection is that it will complete its recommended maintenance and block pruning activities citywide by FY 2024-25, or eight years of program operations, rather than its initial goal of three to five years. This current projection assumes a rate-of-work that is faster than what the program has been able to achieve to date, with the assumption that pruning will go more quickly because the remaining trees are in better condition.

No Annual Performance Goals or Metrics

During its initial years of program operations, StreetTreeSF did not establish annual goals for street tree and sidewalk maintenance and did not report on its progress in meeting annual goals in published annual reports or in reports to the Board of Supervisors.¹ In the draft FY 2019-20 Annual Report, StreetTreeSF reports that the program has met its goal of “addressing maintenance needs for the ‘worst first’ street trees and sidewalk damage in the first few years of the program.” However, the annual report does not define the “worst first” goal or describe how the program is determining whether the goal has been met. In communications with our team, StreetTreeSF representatives have stated that the program has met its goal of completing maintenance on 90 percent of the City’s highest priority areas.² However, the number of “highest priority” areas and the methodology for calculating the 90 percent goal has not been officially established or communicated in public documents for either street tree maintenance activities or tree-related sidewalk damage activities. According to StreetTreeSF management, the program plans to establish annual maintenance goals once baseline pruning has been completed.

Slow Baseline Tree Maintenance Progress

Before the launch of the StreetTreeSF program in 2017, the Bureau of Urban Forestry prepared an Implementation Plan that outlined the steps needed to create and implement StreetTreeSF as the citywide street tree maintenance program that was established by Proposition E. The

¹ StreetTreeSF publishes annual reports on its website and reports annually to the San Francisco Urban Forestry Council, which is an advisory council established in Chapter 12 of San Francisco’s Environment Code to guide the stewardship of the City’s trees and promote a healthy and sustainable urban forest.

² StreetTreeSF tracks its progress by completion of geographic areas of the City called keymaps, which are described in the following pages.

Implementation Plan was prepared using data from a 2016 point-in-time street tree census, which included a physical inspection of each tree in the public right-of-way, identified the location and species of each street tree, and assigned each tree a recommended maintenance action. These recommended actions included: Priority 1 Removal or Prune; Priority 2 Removal or Prune; Priority 3 Removal; and Routine or Training Prune.

- **Priority 1 trees** are trees where removal or pruning is recommended to remove hazards, including trees with a higher risk of failure and trees with broken, diseased, or dying limbs, and to remove trees with defects that cannot be cost effectively or practically treated. Hazards that could be potential dangers to persons or property and seen as potential liabilities are included in Priority 1 trees.
- **Priority 2 trees** are trees that should receive attention but are considered less hazardous than the Priority 1 trees.
- **Priority 3 trees** are trees that still require removal but pose minimal liability to persons or property.
- **Routine pruning trees** are non-priority trees that require routine horticultural pruning to correct structural problems or growth patterns.

The Bureau of Urban Forestry used the results from the 2016 street tree census to prioritize areas of the City for tree maintenance services. StreetTreeSF grouped street trees into approximately 20-block geographic areas called keymaps, which the Department of Public Works uses to program maintenance and operations work. The Bureau of Urban Forestry used a weighted priority system to assign a priority ranking to each keymap, based on the number of priority trees in each keymap. StreetTreeSF is currently conducting block pruning, in which all trees are pruned on a city block according to the prioritized keymaps in order to bring the City's street trees up to a "baseline" level of maintenance.

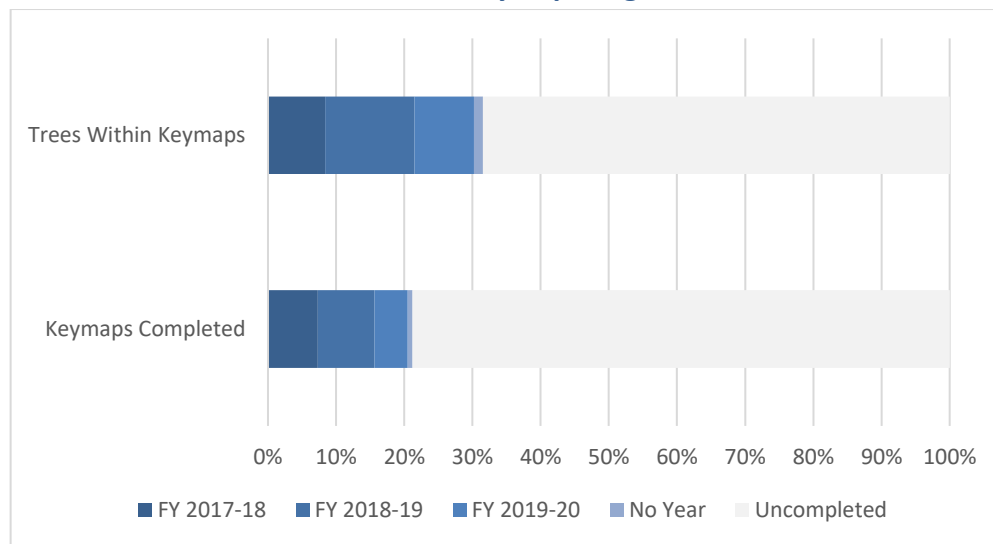
To prioritize repairs of tree-related sidewalk damage, the Bureau of Urban Forestry used data from the 2016 street tree census that identified tree-related sidewalk damage at tree sites and whether the damage was located in the primary pedestrian thoroughway zone. The Bureau also incorporated information from the San Francisco Planning Department and the San Francisco Municipal Transportation Authority to prioritize keymaps with schools, neighborhood commercial districts, hospitals, senior centers, transit stops, and the Vision Zero High-Injury Network.³

³ Vision Zero SF is San Francisco's road safety policy. Vision Zero's High-Injury Network identifies City streets where the most severe and fatal traffic injuries occur.

Tree maintenance keymap progress

StreetTreeSF is behind on its initial tree maintenance progress goals and is not on track to meet its initial program goal of completing the recommended maintenance and removal of priority street trees in the first three to five years of the StreetTreeSF program. As shown in Exhibit 5.1 below, StreetTreeSF completed 21 percent of keymaps and addressed 32 percent of the street trees in the first three years of programming. (Exhibit 5.1 shows only the program’s keymap progress; in addition to the systematic keymap work, StreetTreeSF also performs “off-the-grid” pruning and tree removal work in response to 311 requests and emergency situations outside of the keymap work, which is not included in Exhibit 5.1 below.)

Exhibit 5.1: Street Tree Maintenance Keymap Progress, FY 2017-18 to FY 2019-20



Source: StreetTreeSF

The keymaps completed through November 2020 contain 45 percent of the Priority 1 trees, 49 percent of the Priority 2 trees, and 35 percent of the Priority 3 trees, as shown in Exhibit 5.2 below.

**Exhibit 5.2: Completion of Priority Trees, July 2017 through November 2020
(Keymap Progress Only)**

	Priority 1 Trees	Priority 2 Trees	Priority 3 Trees
Completed trees (Nov. 2020)	2,412	10,140	414
Total trees	5,326	20,812	1,189
Completed percent	45%	49%	35%

Source: StreetTreeSF

According to StreetTreeSF, the program’s progress in FY 2019-20 was negatively affected by COVID-19: tree pruning work was paused for one to two months in late FY 2019-20, and once pruning work resumed, the program experienced staffing reductions due to quarantine

requirements and/or childcare responsibilities of pruning crew members. StreetTreeSF also faced initial budgetary uncertainties that required the program to put new pruning contracts on hold for several months during the spring of 2020.

StreetTreeSF staff currently project that completing keymap block pruning work will take eight years in total and will be completed by FY 2024-25. Completion by FY 2024-25 assumes that StreetTreeSF will be able to complete a higher number of keymaps and perform maintenance on a higher number of trees in future fiscal years than it was able to do in the three completed years of the program. According to StreetTreeSF, program management anticipates that it will be able to address a higher number of trees in future fiscal years because the upcoming keymaps have fewer trees and the trees in the remaining keymaps have fewer maintenance needs.

Conclusion

StreetTreeSF completed 21 percent of keymaps and addressed 32 percent of the street trees within the keymaps in the first three years of programming, and currently projects that it will take eight years to complete keymap block pruning, rather than its initial goal of three to five years. Because the baseline tree maintenance has not been completed, StreetTreeSF has been unable to begin its planned maintenance cycle of proactively maintaining all City street trees every three to five years. StreetTreeSF has not publicly established annual goals for tree pruning or sidewalk repair that are reported to the public or the Board of Supervisors, and has not defined how it measures its success at completing the “worst first” priority keymaps.

Recommendations

The Superintendent of the Bureau of Urban Forestry should:

- 5.1 Establish a realistic annual goal for the number of StreetTreeSF trees to be pruned in each fiscal year, and report on the program’s performance in meeting the annual pruning goal in annual reports and other communications to the public and the Board of Supervisors.
- 5.2 Establish a realistic annual goal for the number of StreetTreeSF tree-related cement repair sites to be completed in each fiscal year, and report on the program’s performance in meeting the annual repair goal in annual reports and other communications to the public and the Board of Supervisors.

Benefits and Costs

Implementation of the proposed recommendations would improve the program's performance tracking and public reporting of progress and milestones. The proposed recommendations would require staff time to establish realistic tree pruning and cement repair goals.

6. StreetTreeSF Staff Vacancies

Key StreetTreeSF positions have been vacant for extended periods of time—in some cases, for the entire three-year period since the program’s inception despite the Department participating in two citywide recruitments with a third underway when the COVID-19 pandemic began. The program has held onto the position authority, but reprogrammed the salary savings to contracts for tree pruning and removal work.

In particular, the Arborist Apprenticeship program—the goal of which is to develop a pipeline of diverse arborist apprentices to promote into the Arborist Technician position—has not filled any of its eight apprenticeship positions in the three years since the inception of StreetTreeSF. Currently, StreetTreeSF seeks a three-to-one ratio of arborists to apprentices as required by the State’s Board of Apprenticeship Standards and for all eight apprentices to be hired as a cohort. However, given StreetTreeSF’s hiring challenges, it is not likely that the program will be able to hire a sufficient number of Arborist Technicians and apprentices to establish the appropriate ratio and cohort size. The Arborist Apprenticeship program should be restructured so that StreetTreeSF can begin to create a pool of qualified candidates to promote into the Arborist Technician position. In addition, Public Works management should work with the Department of Human Resources to develop a Public Works specific recruitment for 3434 Arborist Technicians.

Staff Vacancies Require Budget and Planning Adjustments

In the three years since StreetTreeSF’s inception, the program has experienced a high level of vacancy in five job classifications that can be considered critical to the mission of the program, including:

- 3408 Arborist Apprentice I;
- 3434 Arborist Technician;
- 7514 General Laborer;
- 3436 Tree Crew Supervisor I; and
- 3435 Urban Forestry Inspector.

Of the total 71 authorized StreetTreeSF positions reported by the program, these five position classifications represent 52 positions, or 73 percent of all StreetTreeSF positions.¹ Each of these five classifications directly supports the maintenance and removal of trees; however, all of these mission-critical classifications have experienced an elevated level of vacancy, as displayed in Exhibit 6.1 below, when compared to the Department's vacancy rate of less than 10 percent for all permanent positions over the last four fiscal years. The program has used some of the salary savings from positions for contracts for tree pruning and removal work.

Exhibit 6.1: Positions Directly Related to Maintenance and Removal of Trees Experiencing an Elevated Level of Vacancy, FY 2017-18 through FY 2019-20

Classification	No. of Perm. Authorized Positions	Avg. 3-Year Vacancy Rate ¹	Brief Job Description
3408 Arborist Apprentice I	8	100%	Develop the competency required of a journey level 3434 Arborist Technician
3434 Arborist Technician	19	27%	Perform maintenance and removal of trees and other vegetation and performs related duties as required
7514 General Laborer	12	52%	Perform a variety of manual labor tasks such as removing debris from construction, maintenance, wrecking, or repair work
3436 Tree Crew Supervisor I	6	34%	Responsible for the assignment and supervision of a crew of arborist technicians engaged in pruning and felling trees and limbs
3435 Urban Forestry Inspector	7	44%	Perform duties involving the evaluation and inspection of trees and other vegetation for maintenance, removal, and/or planting
Total	52.00		

Source: StreetTreeSF, DPW

Overall, StreetTreeSF has a higher average vacancy rate than the departmentwide average, although Public Works staff noted that some positions were budgeted at 25 percent (0.25 FTE per position) in the first year of the program (FY 2017-18), which may somewhat inflate the vacancy rate. Of the total 71 authorized StreetTreeSF positions, we found that 28 positions (39

¹ The Annual Salary Ordinance shows 60.00 permanent FTEs authorized by the StreetTreeSF Street Tree Maintenance Fund (established by Proposition E) in FY 2019-20, but the program functionally considers 71 positions (excluding temporary positions) to be associated with StreetTreeSF. In 11 cases, the positions are primarily focused on StreetTreeSF, but are not funded by the Street Tree Maintenance Fund.

percent) were vacant as of the mid-point of FY 2017-18 (pay period 13), 29 positions (41 percent) were vacant as of the mid-point of FY 2018-19, and 24 positions (34 percent) were vacant as of the mid-point of FY 2019-20. Overall, StreetTreeSF's three-year vacancy rate from FY 2017-18 through FY 2019-20 was 39 percent (calculated as the percentage of vacant pay periods of total pay periods). This vacancy rate is significantly higher than the Department's vacancy rate, which has been less than 10 percent in recent fiscal years.

StreetTreeSF has not significantly improved its vacancy rate

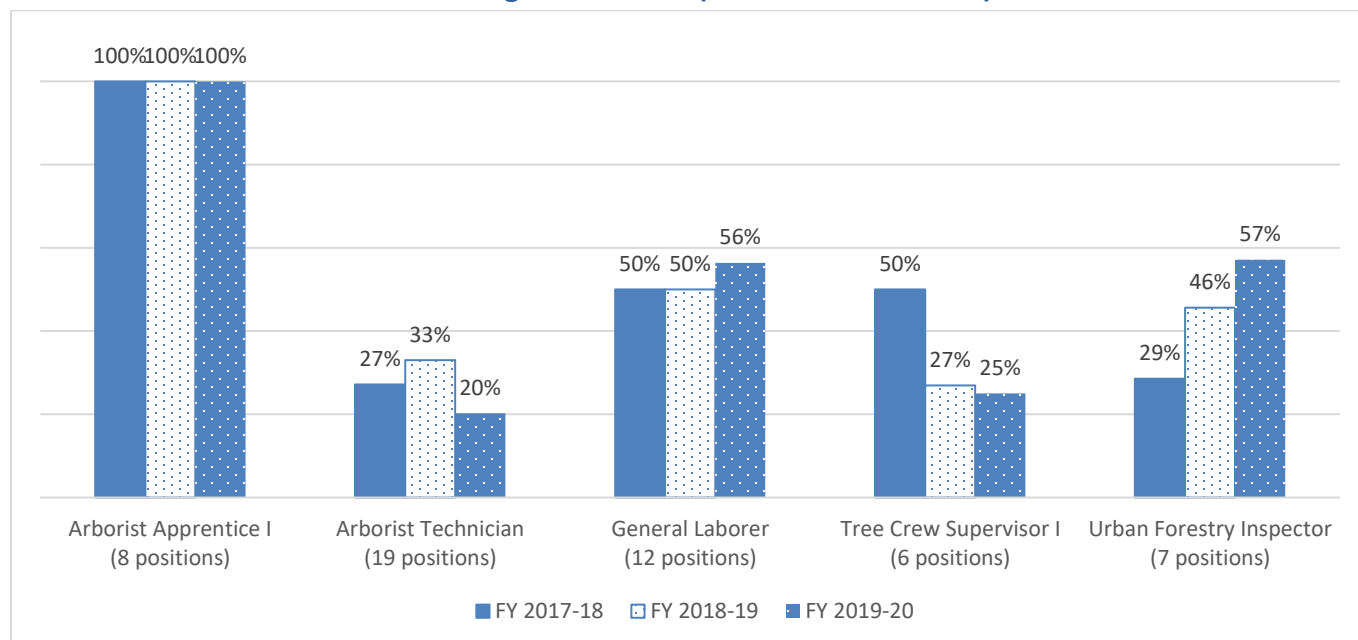
Despite participating in two citywide recruitments in the first three years of the program for 3434 Arborist Technicians and an attempt at a third recruitment² when the COVID-19 pandemic began, the vacancy rate for key positions has not significantly changed over the three-year period. Of the five classifications with significant levels of vacancy, only the 3436 Tree Crew Supervisor I classification experienced a significant decline in the percentage of vacant pay periods over the three-year period, falling from 50 percent in FY 2017-18 to 25 percent in FY 2019-20, as shown in Exhibit 6.2 below. One of the five classifications—the 3434 Arborist Technician—was reported to have undergone a change in recruitment practices intended to fill vacant positions faster. The program reported an increased frequency of posting for the position, with two hiring processes in the last three fiscal years. However, the vacancy rates for this position have not materially improved. Public Works staff have noted challenges with the citywide recruitment process in that other departments (Recreation and Parks and the San Francisco Public Utilities Commission) are competing for the same candidate pool.

For each of the five classifications, the program has fallen short of its target hiring year, according to its July 2017 implementation plan. These positions have been vacant for a longer duration of time than the average time to hire for permanent positions department-wide, which the Department of Public Works reported was 151 days in FY 2019-20. In the case of the 3434 Arborist Technician position, it was reported by the Superintendent for the Bureau of Urban

² Public Works staff note that they have recently resumed the exam process for the third citywide recruitment for 3434 Arborist Technicians.

Forestry that a limited pool of qualified candidates contributes to the time to fill the arborist technician positions.

Exhibit 6.2: Annual Percent of Vacant Pay Periods for Select StreetTreeSF Job Classifications, FY 2017-18 through FY 2019-20 (Permanent Positions)



Source: DPW

StreetTreeSF has not launched planned arborist apprentice program

The Bureau of Urban Forestry reported that the apprenticeship program is intended to promote greater diversity in the field and to create a pipeline for civil service Arborist Technicians. However, StreetTreeSF has not filled any of the eight authorized 3408 Arborist Apprentice I positions over the last three fiscal years, which in turn has prevented the Department from training and internally promoting future arborist technicians from diverse backgrounds. The Arborist Apprentice I classification is the entry level training class, which exists to develop the competencies required of a journey level Arborist Technician, a classification that has experienced a 27 percent vacancy rate over the three-year period since the program's inception. The Arborist Apprentice I positions only require a high school diploma or equivalent, which make it a viable pathway to attract a wide range of applicants of diverse backgrounds.

The Arborist Apprentice Program requires a three-to-one ratio of arborist technicians to apprentices under the State Board of Apprenticeship Standards. The program was designed with all eight apprentices to be hired as a cohort so they can undergo a training curriculum at the same pace and so that the Related and Supplemental Instruction (RSI) could be provided by the Local Education Agency as a group. Hiring eight Arborist Apprentice positions would therefore require staffing levels of 24 arborists. In the final pay period of FY 2019-20, StreetTreeSF had 16 filled

Arborist Technician positions (out of 19 authorized) and four filled Arborist Technician Supervisor I positions (out of six authorized), for a total of 20 filled Arborist Technician and Arborist Technician Supervisor I positions. (The program also had one filled temporary Arborist Technician position and one filled Arborist Technician Supervisor II position, which oversees all the tree crew teams.) The difficulty of coordinating training schedules was cited as the reason for which the cohort could not be hired in smaller groups. However, given StreetTreeSF's ongoing difficulty in hiring Arborist Technicians, as discussed above, it is not likely that the program will be able to hire enough Arborist Technicians to support an apprenticeship cohort of eight apprentices.

Conclusion

While a certain level of vacancies at any given time is expected, the StreetTreeSF Program has experienced a high level of vacancy for the duration of the program and has failed to improve its hiring rate. StreetTreeSF has the flexibility to shift unspent funding intended for positions to contracts within the Street Tree Maintenance Fund, which enables program management to handle delays in hiring as well as the lengthy procurement process for specialized equipment. Program management should work with the Department of Human Resources to develop a Public Works-specific recruitment for 3434 Arborist Technicians and develop a strategy so that the Arborist Apprentice Program can begin training a small cohort of arborist apprentices.

Recommendations

The Superintendent of the Bureau of Urban Forestry should:

- 6.1 Work with the Department of Human Resources to develop a recruitment for 3434 Arborist Technicians that is specific to the Department of Public Works.
- 6.2 Restructure the Arborist Apprentice Program, such as revising the cohort size of arborist technicians to apprentices and the training schedule, so that the program can begin to fill these positions and develop a pipeline for the arborist technician role.

Benefits and Costs

Implementation of the proposed recommendations might increase the costs of training the apprentices and conduct recruitment, but would better position the program to fill its open arborist technician positions with a diverse workforce.

7. Geographic Distribution of StreetTreeSF Services

The distribution of StreetTreeSF tree maintenance and sidewalk repair services has been uneven across the City due to the program's prioritization methodologies and the uneven distribution of trees and tree-related sidewalk damage within the City. Although program management states that equity is considered in the program's work, StreetTreeSF did not explicitly consider geographic equity or the geographic distribution of services when the program began operations in FY 2017-18. Instead, program management prioritized work to maximize public safety and efficiency. As a result, some neighborhoods of the City have received very few StreetTreeSF services during the first three years of program operations. There is still opportunity to re-evaluate and re-prioritize the areas designated as lower-priority using additional criteria, including geographic location, given that StreetTreeSF management estimates that it will take until FY 2024-25 to complete the initial task of baseline pruning. Re-prioritizing the remaining un- and under-served areas of the City would allow the program to ensure that all neighborhoods receive at least some StreetTreeSF services in the near-term during FY 2021-22 and FY 2022-23.

Some Areas of the City Have Received Few StreetTreeSF Pruning Services to Date

Prior to implementing StreetTreeSF, the Superintendent of the Bureau of Urban Forestry and the Director of Public Works met with the City's Risk Manager to discuss the prioritization approach to pruning and sidewalk repairs. The focus of the program was on achieving the greatest safety gains for the largest areas while not losing the efficiency of systematic grid pruning. Therefore, the StreetTreeSF program's prioritization methodology for tree services gave priority to areas of the City with higher concentrations of street trees. This methodology resulted in neighborhoods with lower volumes of street trees being and areas with trees in better condition being less likely to receive StreetTreeSF pruning services during the first three years of program operations.

StreetTreeSF tree census and tree distribution

In 2016, before the launch of StreetTreeSF, the Bureau of Urban Forestry, working with the San Francisco Planning Department, commissioned a point-in-time street tree census to identify the location and species of each street tree in San Francisco. The census information collected included a physical inspection and assigned a recommended maintenance action to each street tree. These recommended actions included: Priority 1 Removal or Prune; Priority 2 Removal or Prune; Priority 3 Removal; and Routine or Training Prune. These recommendations are summarized below. The census also identified tree stumps, tree wells, and potential sites for new

tree planting, as well as existing sidewalk damage and whether that damage was located in the pedestrian through-way zone.

- **Priority 1 trees** are trees where removal or pruning is recommended to remove hazards, including trees with a higher risk of failure and trees with broken, diseased, or dying limbs, and to remove trees with defects that cannot be cost effectively or practically treated. Hazards that could be potential dangers to persons or property and seen as potential liabilities are included in Priority 1 trees.
- **Priority 2 trees** are trees that should receive attention but are considered less hazardous than the Priority 1 trees.
- **Priority 3 trees** are trees that still require removal but pose minimal liability to persons or property.
- **Routine pruning trees** are non-priority trees that require routine horticultural pruning to correct structural problems or growth patterns.

Exhibit 7.1 below shows the distribution of priority trees by supervisorial district. In 2016 when the census was completed, each district had between 201 and 872 Priority 1 trees.

Exhibit 7.1: StreetTreeSF Census Recommendations

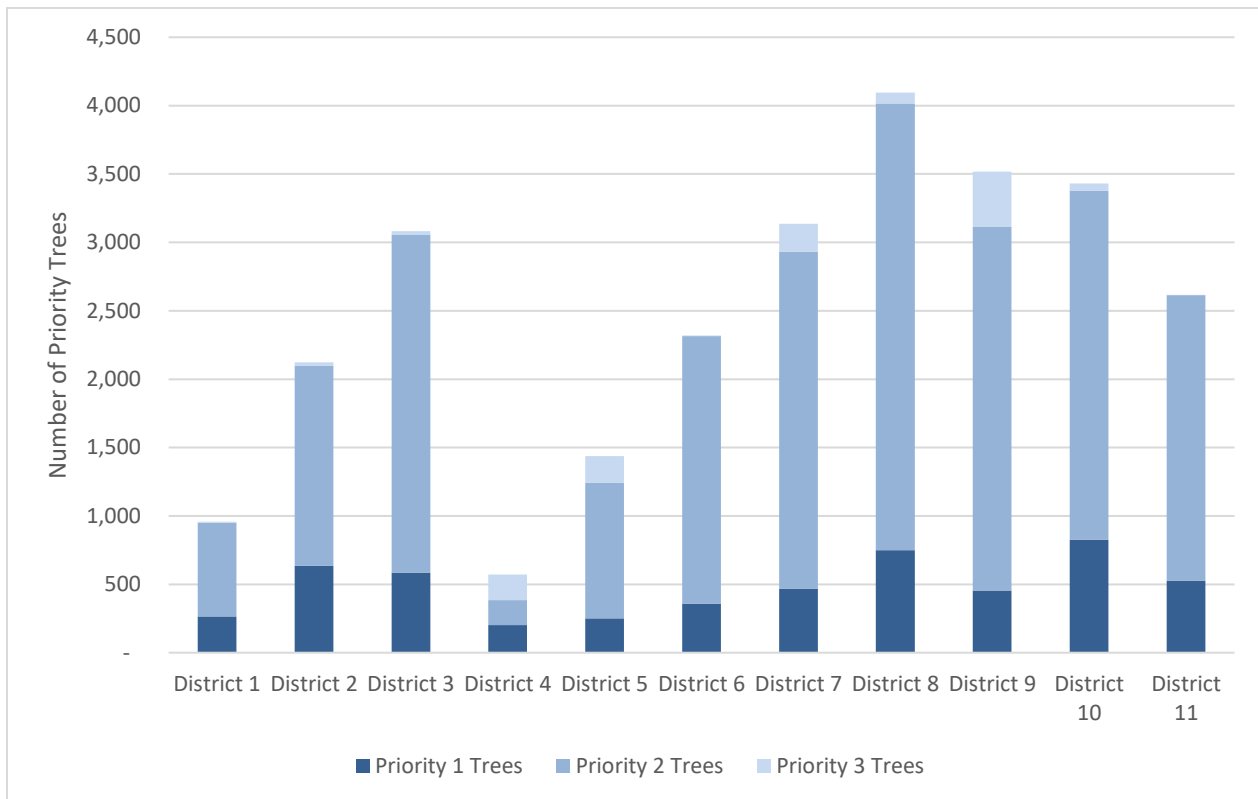
District	Priority 1 Trees	Priority 2 Trees	Priority 3 Trees	Routine and Training Prune Trees	Other Rec. Maintenance*
District 1	265	686	6	8,170	127
District 2	634	1,464	25	13,063	224
District 3	585	2,470	27	4,856	88
District 4	201	183	187	7,350	1,330
District 5	252	990	196	11,340	398
District 6	359	1,956	4	6,872	56
District 7	466	2,467	204	9,411	103
District 8	750	3,266	80	12,786	248
District 9	455	2,658	405	8,462	124
District 10	827	2,549	54	11,825	1,173
District 11	528	2,087	1	4,157	74
No district	4	36	0	104	1
Total	5,326	20,812	1,189	98,396	3,946

Source: StreetTreeSF.

*Other recommended maintenance includes stump removal, tree well maintenance, and new tree planting.

Exhibit 7.2 below highlights the volume of Priority 1, Priority 2, and Priority 3 trees by supervisorial district.

Exhibit 7.2: StreetTreeSF Census Priority Recommendations

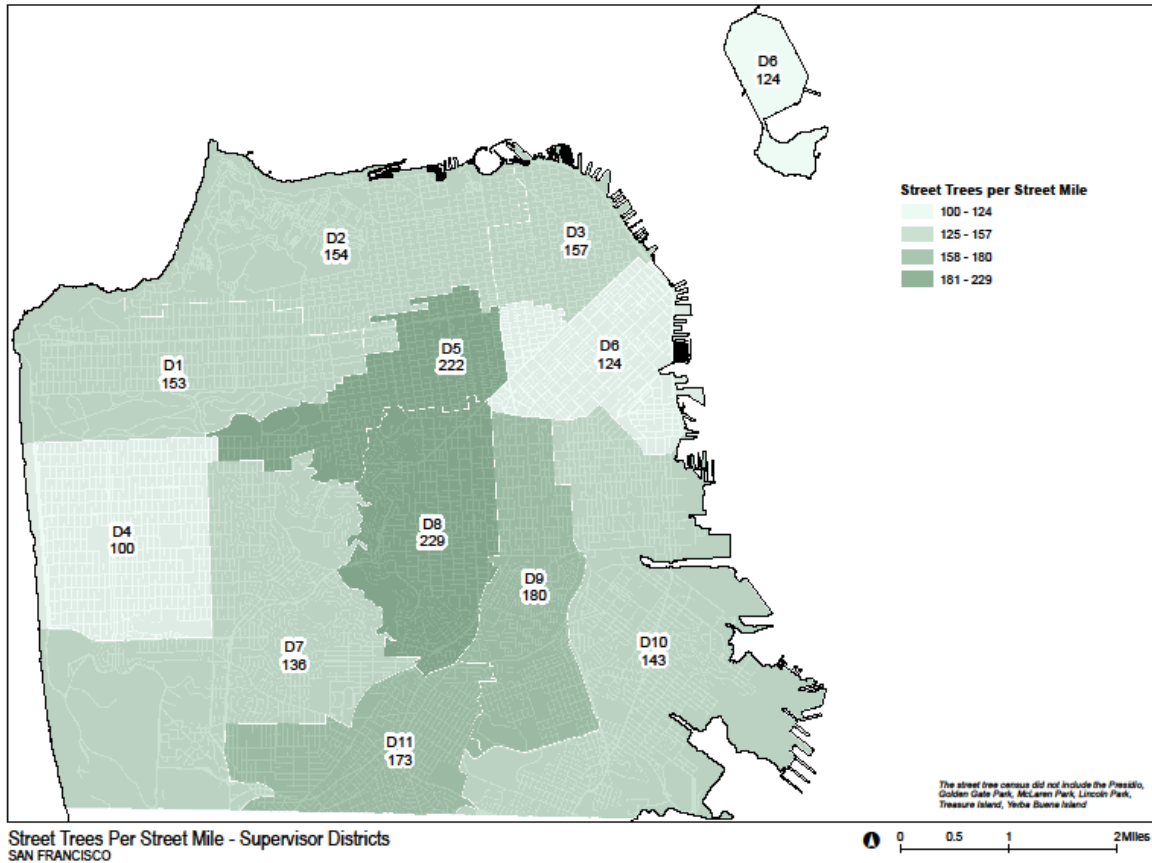


Source: StreetTreeSF.

Note: Exhibit above includes only priority trees, and excludes trees recommended for routine or training pruning.

As shown in Exhibit 7.2 above, the number of priority trees varies significantly across supervisorial districts, which is partially due to the fact that San Francisco's street tree population overall is not evenly distributed throughout the City even after accounting for differences in district size. District 8, the district with the highest number of priority trees, is also the district with the highest number of street trees per street mile, as shown in Exhibit 7.3 below. District 8 has more than twice as many street trees per mile as District 4, which has the lowest number of priority trees and also the lowest number of street trees per mile.

Exhibit 7.3: Street Trees per Street Mile by District



Source: StreetTreeSF

Overall, Priority 1 trees represented between 1.9 and 7.7 percent of all street trees within a district, as shown in Exhibit 7.4 below. Across all supervisorial districts, District 4 had the lowest number of Priority 1 trees (201 trees), and District 10 had the highest number of Priority 1 trees (827 trees). In total, 5,326 or four percent of the City's counted 129,669 street trees or tree locations¹ were recommended for Priority 1 pruning or removal.

¹ The census count of 129,669 street trees is higher than the City's stated population of approximately 125,000 street trees because the tree census includes empty tree wells, stumps, and potential planting sites for new trees.

Exhibit 7.4: StreetTreeSF Census Priority 1 Trees

District	Number of Priority 1 Trees	Priority 1 Trees as % of Total District Trees
District 4	201	2.2%
District 5	252	1.9%
District 1	265	2.9%
District 6	359	3.9%
District 9	455	3.8%
District 7	466	3.7%
District 11	528	7.7%
District 3	585	7.3%
District 2	634	4.1%
District 8	750	4.4%
District 10	827	5.0%
<i>No district</i>	4	
Total	5,326	4.1%

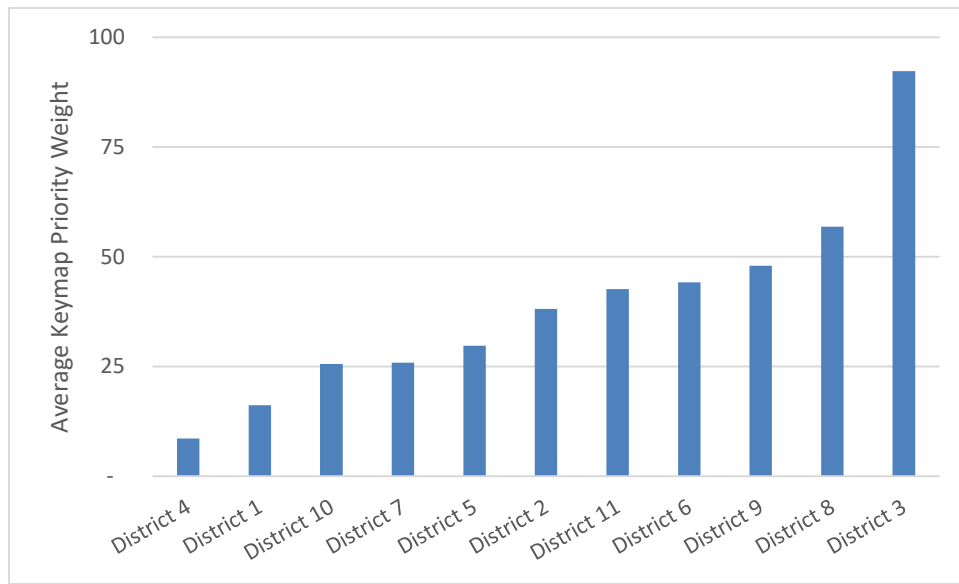
Source: StreetTreeSF.

StreetTreeSF tree prioritization methodology

In order to maximize efficiency of tree maintenance actions, the Bureau of Urban Forestry used the results from the street tree census to plan its operations when the StreetTreeSF program launched. The program grouped street trees into approximately 20-block geographic areas called keymaps, and used the results from the street tree census to create a weighted priority system that assigned a priority ranking to each keymap based on the number of Priority 1, Priority 2, and Priority 3 trees in each keymap.

The results of the weighting process for recommended tree maintenance actions by district are shown in Exhibit 7.5 below. District 4 had the lowest average priority weight per keymap, while District 3 had the highest average priority weight per keymap.

Exhibit 7.5: Average Keymap Priority Weight, by District



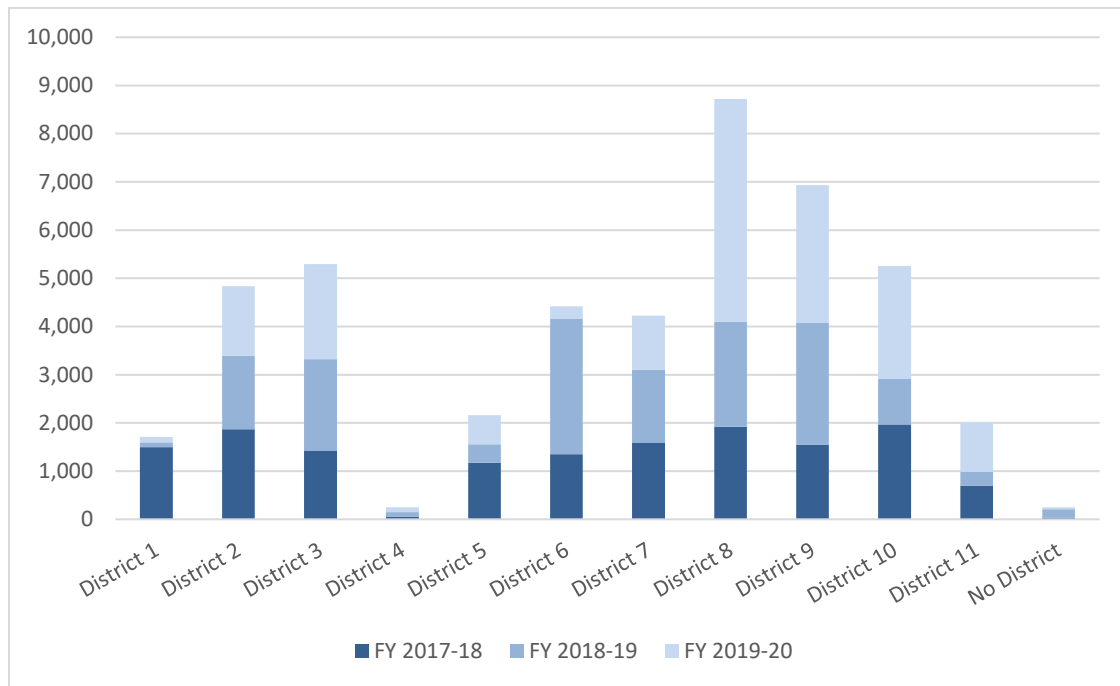
Source: StreetTreeSF.

*Note: Many keymaps cross District boundaries; this table presents information for all keymaps either fully or partially within a District

Because the keymap prioritization methodology gave priority to keymaps with higher concentrations of hazardous trees, neighborhoods with fewer street trees overall were less likely to be prioritized for StreetTreeSF services. For example, District 4, which has the lowest number of street trees per street mile as shown in Exhibit 7.3 above, also has the lowest average priority weight per keymap, as shown in Exhibit 7.4 above. However, despite having the lowest average priority weight, District 4 still has 201 Priority 1 trees identified in need of pruning or removal.

StreetTreeSF tree maintenance services performed

As shown in Exhibit 7.6 below, some of the City's supervisorial districts have received very little StreetTreeSF tree pruning and removal services since the program's inception in FY 2017-18.

Exhibit 7.6: Number of Street Trees Pruned or Removed by StreetTreeSF, by Fiscal Year


Source: StreetTreeSF.

Note: Counts of tree removal includes stump grinding.

Exhibit 7.7 below displays the total numbers of trees pruned or removed in a district as a percentage of the district's total counted street trees or tree sites.

Exhibit 7.7: Trees Pruned or Removed by StreetTreeSF, Three-Year Total

FY 2017-18 — FY 2019-20		
District	Street Trees Pruned or Removed	Percent of Street Trees in District
District 1	1,712	19%
District 2	4,836	31%
District 3	5,295	66%
District 4	251	3%
District 5	2,158	16%
District 6	4,416	48%
District 7	4,224	33%
District 8	8,719	51%
District 9	6,934	57%
District 10	5,252	32%
District 11	2,011	29%

Source: StreetTreeSF.

Note: Tree removal includes stump grinding; table does not include trees pruned with no district indicated.

Overall, while a prioritization methodology based on tree volume allowed the Bureau of Urban Forestry to systematically address the areas of highest volume of need first, it also caused some areas of the City to receive little to no StreetTreeSF services during the first three years of the program. These are also areas of the City that have low overall volumes of street trees and receive less of the benefits that these trees provide. Although it allows for greater efficiency in the delivery of tree maintenance services, prioritizing areas of the City with higher volumes of street trees reinforces existing geographic inequities: areas with fewer street trees receive fewer street tree benefits *and* fewer StreetTreeSF services. Overall growth of the City's urban canopy overall, which is discussed in Section 8 of this report, has the potential to address this geographic inequity: if areas of low tree canopy coverage are prioritized for new tree planting, those areas will also receive more StreetTreeSF services.

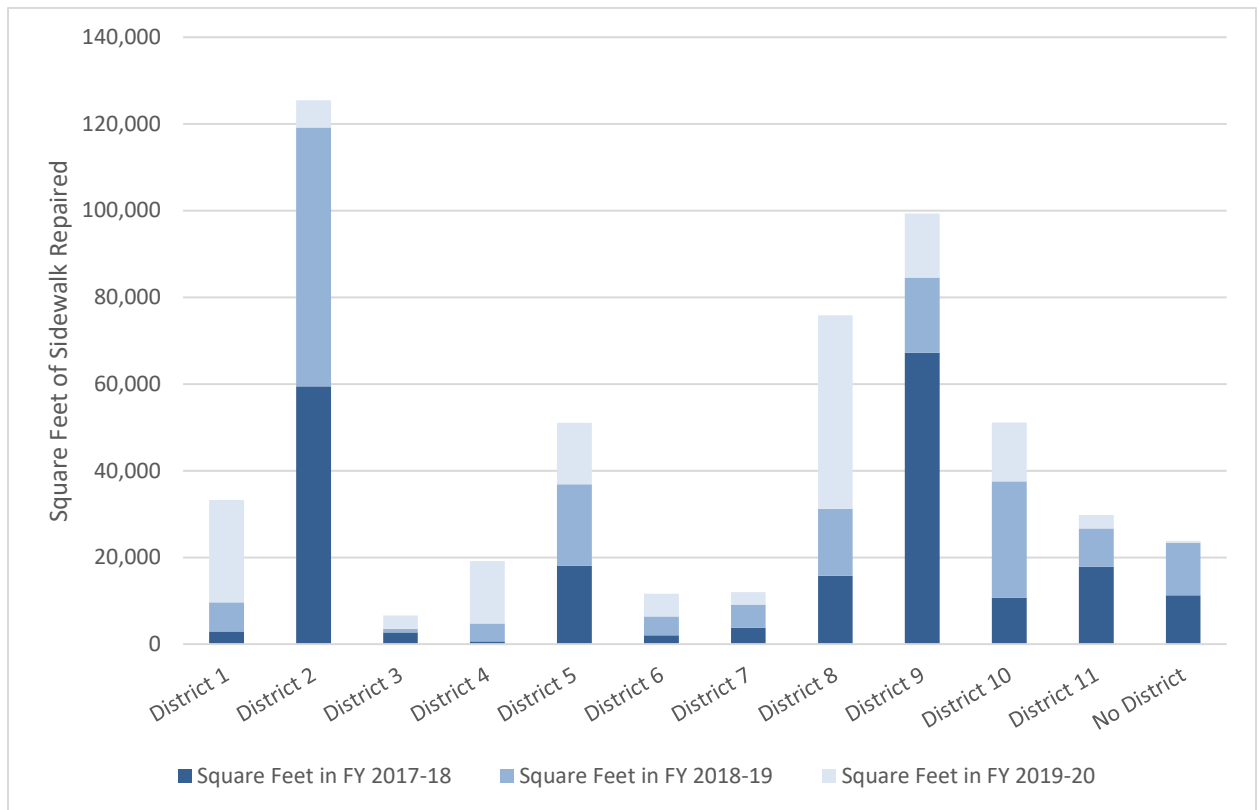
Some Areas of the City have Received Few StreetTreeSF Sidewalk Repair Services To Date

In addition to tree maintenance services, StreetTreeSF is also responsible for repairing City sidewalks that have been damaged by street trees. The 2016 street tree census identified tree-related sidewalk damage at tree sites, and the Bureau of Urban Forestry used a similar keymap ranking process for tree-related sidewalk repair. However, when prioritizing keymaps for sidewalk repair services, the program also considered the presence of schools, neighborhood commercial districts, hospitals, senior centers, transit stops, and the Vision Zero High-Injury Network.² The prioritization for sidewalk repair services was developed in consultation with the City's Risk Manager.

As shown in Exhibit 7.8 below, this prioritization methodology has also resulted in an uneven distribution of tree-related sidewalk repair services in the first three years of the StreetTreeSF program. Exhibits 7.8 and 7.9 below display the square feet of street tree-related sidewalk repair services and the lineal feet of concrete slicing sites completed in the first three years of the StreetTreeSF program. Overall, Districts 1, 4, and 7 received the smallest volumes of cement sidewalk repair and concrete slicing services.

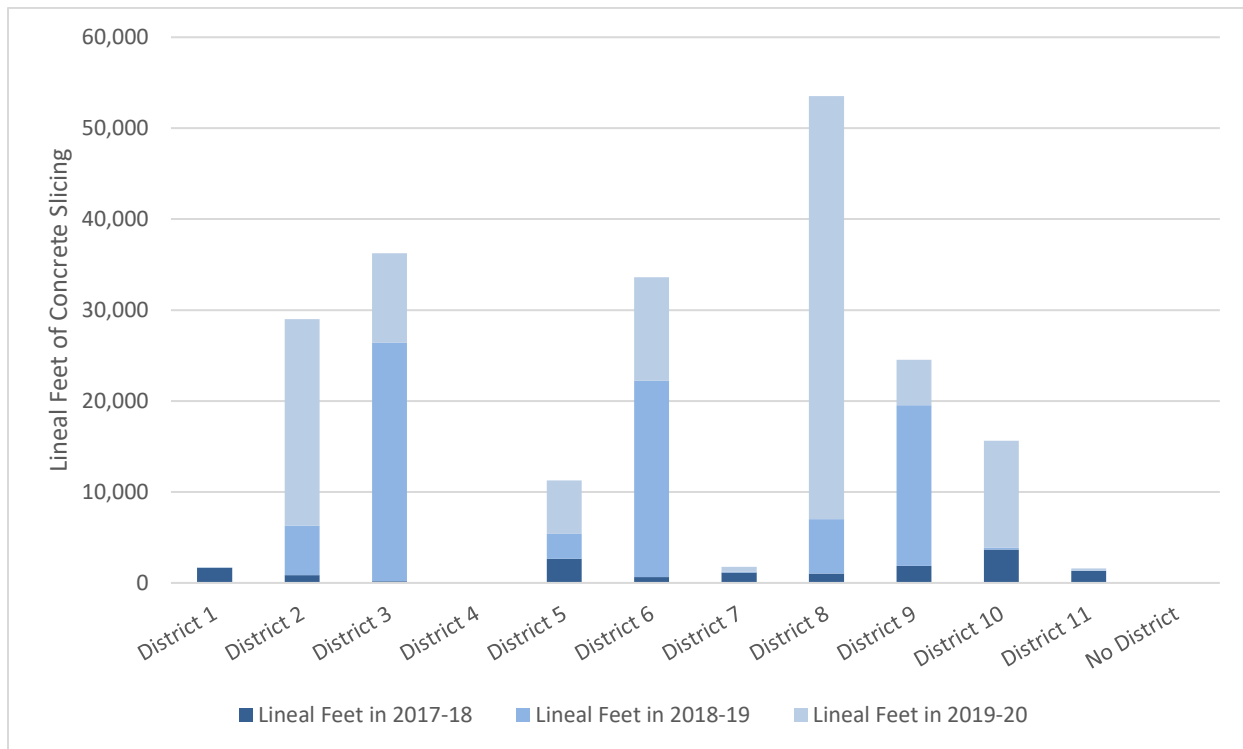
² Vision Zero SF is San Francisco's road safety policy. Vision Zero's High-Injury Network identifies City streets where the most severe and fatal traffic injuries occur.

Exhibit 7.8: Square Feet of Street Tree-Damaged Sidewalk Repaired, by Fiscal Year



Source: StreetTreeSF.

Note: Square footage includes tree-related sidewalk damage repaired by Bureau of Urban Forestry internal cement crews, Bureau of Urban Forestry contractor crews, and the Bureau of Street Use and Mapping Sidewalk Inspection and Repair program and the Accelerated Sidewalk Abatement Program.

Exhibit 7.9: Lineal Feet of Concrete Slicing Performed, by Fiscal Year

Source: StreetTreeSF.

Opportunities to Improve Equity

Although StreetTreeSF program management states that it considers equity in its work, the program did not explicitly consider the geographic distribution of services when prioritizing keymaps for StreetTreeSF services at the start of operations in FY 2017-18. In the first three years of the StreetTreeSF program, it has addressed many of the highest-priority areas for both tree maintenance services and sidewalk repair services. However, StreetTreeSF currently projects that it will not complete its street tree keymap pruning until FY 2024-25, which means the program has at least four more years of keymap tree services to provide. (StreetTreeSF's overall progress in its pruning and sidewalk repair schedule is discussed further in Section 5 of this report.)

Given that StreetTreeSF has been able to address many of the keymaps considered the “highest risk” in the first three years of the program, it has the opportunity to re-evaluate and re-prioritize the remaining keymaps using additional criteria, including the consideration of geographic location. Re-prioritizing the remaining keymaps would help the program to ensure that all neighborhoods of the City receive at least some StreetTreeSF services in the near term.

Conclusion

San Francisco's street trees are not evenly distributed across the City. StreetTreeSF has so far focused on areas with high concentrations of trees to maximize tree activity efficiency and did not consider City neighborhood or geographic distribution when initially prioritizing services. This methodology resulted in areas of the City with low tree density not being prioritized for maintenance (despite the presence of Priority 1 trees). When prioritizing keymaps for cement work, the program similarly considered areas of high risk but did not consider geographic location. As a result, some neighborhoods of the City have received very little StreetTreeSF services during the first three years of the program. Now that many of the highest-priority tree maintenance and sidewalk repair keymaps have been addressed, StreetTreeSF management should consider re-prioritizing the remaining keymaps so that areas that have been under-served by StreetTreeSF thus far receive services in the next two fiscal years.

Recommendations

The Superintendent of the Bureau of Urban Forestry should:

- 7.1 Consider re-evaluating and re-prioritizing the uncompleted street tree and cement repair work keymaps using additional criteria, including geographic location, for program activities once the keymaps are in the "green" or lowest priority tier.

Benefits and Costs

Implementation of the proposed recommendations would require a small amount of staff time and planning to evaluate and re-prioritize keymaps and should be manageable within existing resources. Providing StreetTreeSF services in neighborhoods that have received little to no services to-date would distribute the benefits of StreetTreeSF more equitably across the City, as well as offer greater visibility to the StreetTreeSF program in neighborhoods where it has had little presence to date.

8. Street Tree Canopy Growth and Geographic Distribution

Phase I of San Francisco's Urban Forest Plan established the goal of growing the City's street tree population to reach 155,000 trees by 2034. Several other City documents, including the Ten-Year Capital Plan and the Climate Action Plan, also recommend increasing the number of street trees. However, the City does not have a dedicated funding source for growing the street tree population and the Tree Maintenance funding cannot be used to expand the urban forest. Further, the number of new street trees planted each year is not enough to account for annual tree mortality in order to maintain a baseline street tree population of 125,000, much less increase the number of trees to meet the Urban Forest Plan's goal.

San Francisco's street tree population and its associated benefits are not evenly distributed across the City. The Urban Forest Plan recommends that within five years of the Plan's publication the Department of Public Works develop a citywide planting strategy to address gaps in street tree coverage, and a long-term street tree management plan to formalize a maintenance strategy and plan for the succession of trees. However, six years after the Urban Forest Plan was adopted, the Department has still not yet developed the recommended long-term street tree management plan and just completed the planting strategy after the completion of our audit fieldwork. The distribution of the City's urban canopy and its benefits will remain unevenly distributed across different neighborhoods without a targeted increase in street tree planting to focus on under-served neighborhoods that is guided by a formal planting strategy.

Planting New and Replacement Street Trees

The goal of the City's Urban Forest Plan is to provide a long-term vision and strategy to improve the health and sustainability of the City's urban forest. Phase I of the Urban Forest Plan, which was released in 2014 and adopted by the Board of Supervisors in 2015,¹ focuses on street trees. Phases II and III of the Urban Forest Plan have not yet been developed, but will address trees in parks and open spaces (Phase II) and trees on private property and buildings (Phase III). Together, this plan intended to be a comprehensive strategy for the City's urban forest.

One of the key recommendations in Phase I of the Urban Forest Plan was to establish and fund a citywide street tree maintenance program, which has been accomplished with the passage of Proposition E in November 2016 and the launch of StreetTreeSF in July 2017. However, Phase I

¹ Ordinance No. 23-15 (file no. 14-1264).

of the Urban Forest Plan also recommends several actions to address the City's insufficient and shrinking tree canopy, many of which have not been implemented.

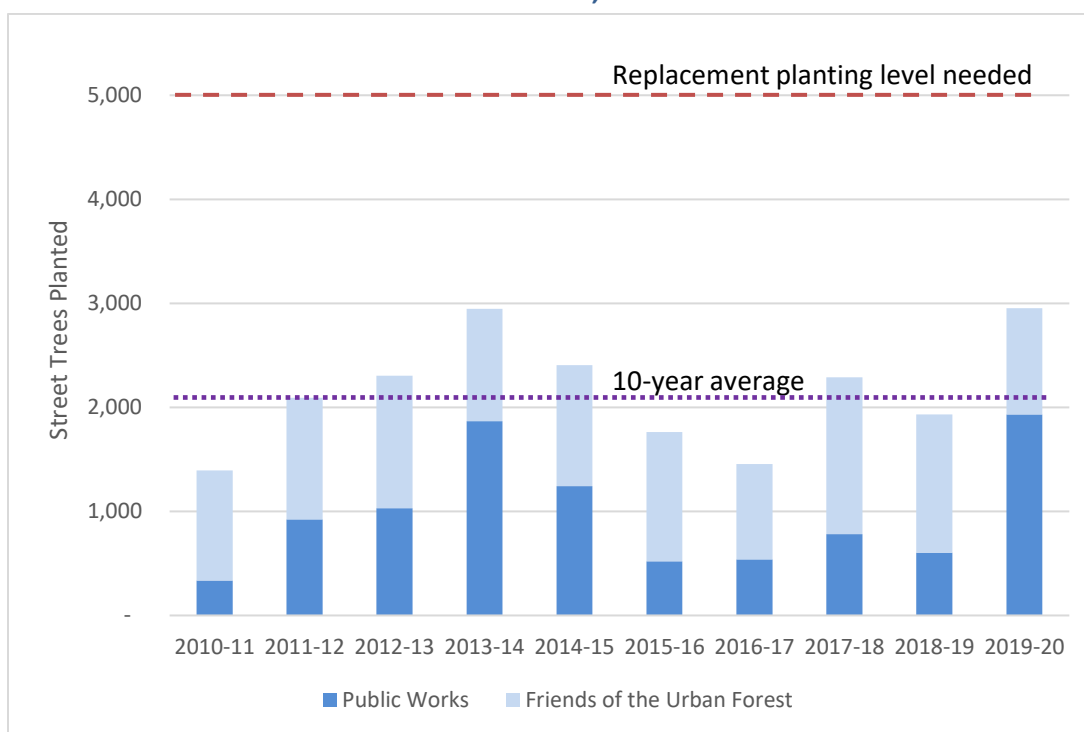
Maintaining the street tree canopy

The City is not planting enough trees to keep up with tree mortality and ensure that the street tree canopy does not shrink due to funding limitations, despite a recommendation in Phase I of the Urban Forest Plan to stabilize the urban forest by achieving a net zero loss of trees. The Department of Public Works assumes a four percent annual street tree mortality rate, which is consistent with academic estimations. In other words, it is assumed that approximately four percent of street trees die or must be removed every year. Therefore, based on an inventory of approximately 125,000 street trees, 5,000 replacement trees need to be planted annually to account for this four percent mortality rate and ensure that the City's street tree population does not shrink. However, an average of only 2,154 street trees have been planted per year in the City over the last decade, according to survey data collected by the Urban Forestry Council.²

The Urban Forestry Council conducts an annual survey to collect data from public, private, and nonprofit agencies³ that plant and/or maintain the urban forest within San Francisco. Not all of the trees reported in the survey are considered street trees (for example, trees planted by the Presidio Trust, which oversees and manages the trees in the Presidio of San Francisco, are part of the City's tree canopy and are included in the Urban Forestry Council's survey, but are not considered street trees). Street trees are planted in the public right-of-way by the Department of Public Works and Friends of the Urban Forest, a non-profit organization that collaborates with the Department of Public Works on the planting of street trees. The numbers of trees planted by the Department of Public Works and Friends of the Urban Forest are shown in Exhibit 8.1 below.

² The San Francisco Urban Forestry Council is an advisory council established in Chapter 12 of San Francisco's Environment Code to guide the stewardship of the City's trees and promote a healthy and sustainable urban forest.

³ These entities include: California Department of Transportation District 4, City College of San Francisco, Friends of the Urban Forest, Laguna Honda Hospital, Port of San Francisco, Presidio Trust, Recreation and Parks Department, San Francisco Housing Authority, San Francisco International Airport, San Francisco Municipal Transportation Agency, San Francisco Planning Department, San Francisco Public Library, San Francisco Public Utilities Commission, San Francisco Public Works Bureau of Urban Forestry, San Francisco State University, San Francisco Unified School District, Treasure Island Development Authority, University of California, San Francisco, Pacific Gas and Electric, San Francisco General Hospital, and the Office of Community Investment and Infrastructure.

Exhibit 8.1: Street Trees Planted, FY 2010-11 to FY 2019-20

Source: Urban Forestry Council Annual Reports.

As shown in Exhibit 8.1 above, the City's 10-year average of 2,154 street trees planted annually is less than half of the 5,000 of street trees that need to be planted annually to ensure that the City's street tree population does not shrink, given a four percent tree mortality rate. Over the past 10 years, the Department of Public Works and Friends of the Urban Forest have not planted enough trees to maintain the City's baseline street tree population.

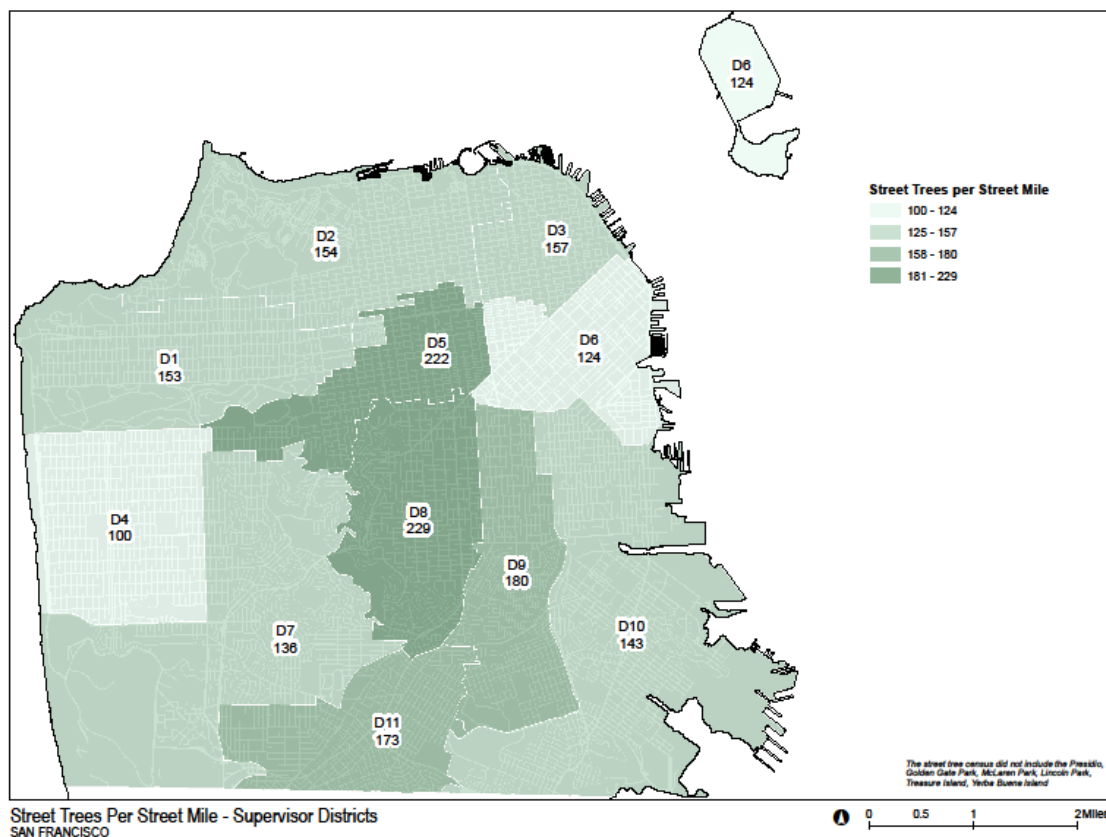
Expanding the street tree canopy

The City is not on track to meet its goal of growing the street tree canopy to 155,000 street trees by 2034 and has not developed several key street tree-related strategies and plans that were recommended in Phase I of the Urban Forest Plan. At the same time, the City's existing street trees and their associated benefits are unevenly distributed across the City and will remain so without a significant increase in planting and strategies to guide the new tree planting to ensure that neighborhoods with fewer trees are prioritized for planting.

Areas of the City with Low Street Tree Coverage

The City's street tree population, and its associated benefits, are not evenly distributed across San Francisco. District 8, the supervisorial district with the highest number of street trees per street mile, has more than twice as many street trees per street mile as District 4, which has the fewest, as shown in Exhibit 8.2 below.

Exhibit 8.2: Street Trees per Street Mile by District



Source: StreetTreeSF.

As noted in Phase I of San Francisco’s Urban Forest Plan, street trees provide many social, economic, and environmental benefits to City neighborhoods, including:

- Improved air quality and absorbed pollution;
- Reduced building heating and cooling costs;
- Decreased noise pollution;
- Improved public mental and physical health; and
- Reduced stormwater runoff and associated infrastructure costs

San Francisco’s Biodiversity Policy, which was established by the Board of Supervisors by resolution in 2018,⁴ includes Goal #2: “Equitable Access, Awareness, and Experience of Nature: Connect all residents, workers, and visitors with nature every day in neighborhood green spaces, parks, and natural habitats.” Similarly, Phase I of the Urban Forest Plan recommends that the City “pursue an expanded and equitable distribution of trees and greening throughout the City”

⁴ Resolution No. 107-18 (file no. 18-0161).

[emphasis added]. However, because the City's street tree population is not evenly distributed across the City, not all City residents currently benefit equally from the City's street trees, and because the City's street tree population is not growing, this status quo is unlikely to change.

Canopy Coverage Growth Goals

Strategy 1.1.4 of Phase I of the Urban Forest Plan established the following long-term street tree canopy goal: "Increase the number of street trees by half (50,000 new trees) [to] grow our street tree population from 105,000 to 155,000 trees" by 2034. The goal of 50,000 new trees to reach 155,000 trees and "increase the number of trees by half" was based on an assumption of 105,000 street trees in San Francisco. However, the 2016 street tree census (which was completed after Phase I of the Urban Forest Plan) counted approximately 125,000 street trees, which allows for two interpretations of the Urban Forest Plan's goal. The more conservative interpretation of this strategy, which is to reach 155,000 total trees rather than to increase the street tree population by 50 percent, means the City needs to plant approximately 30,000 new street trees by 2034 in order to meet the Urban Forest Plan goal. The Bureau of Urban Forestry recently completed its planting strategy in June 2021, after the completion of audit fieldwork, which reflects the goal of having 155,000 total street trees.

As discussed above and shown in Exhibit 8.1, the City is not planting enough trees to account for tree mortality and maintain its existing baseline tree population, much less increase the street tree population. In order to meet the Urban Forest Plan goal of reaching 155,000 trees by 2034, beginning in FY 2021-22 the City will need to plant approximately 2,300 *new* trees per year (30,000 new trees total over 13 years) plus between 5,000 and 6,100 replacement trees per year.

As the City's tree population grows, more replacement trees will need to be planted to account for the estimated four percent annual mortality rate of a growing tree population; however, the mortality rate for new trees may be lower than for the City's existing canopy. Therefore, Exhibit 8.3 below presents two scenarios for new and replacement planting needs: Scenario 1 assumes a flat four percent tree mortality rate for all trees, and Scenario 2 assumes a flat four percent tree mortality rate only for the City's baseline tree population.

Exhibit 8.3: Estimated New and Replacement Street Tree Needs

Fiscal Year	Incr. of 30,000			Scenario 1: 4% Mort.		Scenario 2: Flat Mort.	
	Initial Tree Pop.	Ending Tree Pop.	New Trees Planted	Replacement Trees	Total Planted	Replacement Trees	Total Planted
FY 2021-22	125,000	127,300	2,300	5,000	7,300	5,000	7,300
FY 2022-23	127,300	129,600	2,300	5,092	7,392	5,000	7,300
FY 2023-24	129,600	131,900	2,300	5,184	7,484	5,000	7,300
FY 2024-25	131,900	134,200	2,300	5,276	7,576	5,000	7,300
FY 2025-26	134,200	136,500	2,300	5,368	7,668	5,000	7,300
FY 2026-27	136,500	138,800	2,300	5,460	7,760	5,000	7,300
FY 2027-28	138,800	141,100	2,300	5,552	7,852	5,000	7,300
FY 2028-29	141,100	143,400	2,300	5,644	7,944	5,000	7,300
FY 2029-30	143,400	145,700	2,300	5,736	8,036	5,000	7,300
FY 2030-31	145,700	148,000	2,300	5,828	8,128	5,000	7,300
FY 2031-32	148,000	150,300	2,300	5,920	8,220	5,000	7,300
FY 2032-33	150,300	152,600	2,300	6,012	8,312	5,000	7,300
FY 2033-34	152,600	154,900	2,300	6,104	8,404	5,000	7,300
Total			29,900	72,1761	102,076	65,000	94,900

Source: BLA calculations.

In summary, the City needs to plant between 7,300 and 8,404 trees annually in order to reach its goal of 155,000 street trees by 2034, depending on estimations of tree mortality. Annually after FY 2033-34, the City will need to plant 6,200 replacement trees (four percent of 155,000 trees) to maintain the increased inventory. However, as previously stated, fewer than 2,500 street trees have been planted annually on average over the last decade.

New Planting and Long-Term Canopy Management Plans

In addition to Strategy 1.1.4, which established the goal to grow the street tree population to 155,000 trees, Phase I of the Urban Forest Plan contains two other street-tree related strategies that are critical to the long-term management and growth of the street tree population. These strategies are:

- Strategy 1.1.6 recommends that a **citywide street tree planting strategy** be developed that aims to fill gaps in canopy cover, address aging tree population, and identify vacant and new planting spots.
 - The Urban Forest Plan assigns the Department of Public Works as the lead agency for this strategy. The Bureau of Urban Forestry completed the planting strategy in June 2021 after the completion of our audit fieldwork.
- Strategy 3.2.2 recommends that the Department of Public Works develop a **street tree management plan** that outlines its planting and maintenance plans over the long term. This management plan would enable the Department to formalize a maintenance

strategy, plan for the succession of trees, create planting plans, and identify capital funding needs.

- The Urban Forest Plan assigns the Department of Public Works as the lead agency for this strategy. The Department has not developed the recommended long-term planting and maintenance plan.

The citywide street tree planting strategy and the street tree management plan were both recommended to be developed within five years when Phase I of the Urban Forest Plan was published in 2014,⁵ or by 2019. Both plans and strategies would contribute to the long-term planning effort for the maintenance and growth of the City's street trees and ensure a comprehensive and coordinated strategy to maintain and grow the street tree population. The completion of these formal strategies⁶ and long-term plans will enable policy makers and the public to assess progress on street tree-related goals and ensure that new street trees are planted according to approved criteria (including filling gaps in canopy cover, addressing aging tree population, and filling vacant tree wells).

Other City Goals and Funding Restrictions

Although there is consensus across several City policies and documents that it is critical to not only maintain, but also to grow the City's street tree inventory, there is no dedicated funding stream to finance this increase. In addition to Phase I of the Urban Forest Plan, several other City documents recommend growth of the City's street tree population, including the City's Climate Action Plan and the Ten-Year Capital Plan:

- The current draft⁷ of the City's Climate Action Plan, which is being updated by the Department of the Environment and will be published in the summer of 2021, contains a goal and recommendation that is similar to the street tree increase recommended in Phase I of the Urban Forest Plan. Climate Action Plan goals are targets that must be met to reach net zero greenhouse gas emissions by 2050. In the current draft of the Climate Action Plan, Healthy Ecosystems Strategy #5 is to "Maximize trees and other urban greening throughout the public realm" with the supporting action to plant 30,000 new trees by 2040 (compared to 2034 as recommended in the Urban Forest Plan).

⁵ The Urban Forest Plan was published in 2014 and adopted by the Board of Supervisors in 2015.

⁶ StreetTreeSF staff stated at our audit exit conference, after the completion of our field work, that they had just completed a planting strategy. We were therefore unable to review the plan as part of this audit.

⁷ The San Francisco Climate Action Plan (the Plan), to be released in the summer of 2021, charts a pathway to achieve net zero greenhouse gas (GHG) emissions by 2050 and works toward addressing racial and social equity, public health, economic recovery, resilience, and providing safe and affordable housing. The current draft of the plan is undergoing community engagement and refinement.

- San Francisco’s Proposed Ten-Year Capital Plan for Fiscal Years 2022-2031 contains an Infrastructure and Streets Enhancement Project proposed by the Department of Public Works to plant 6,000 street trees annually to grow the City’s street tree population.

However, unlike street tree pruning and maintenance, there is no dedicated funding stream that has been established to pay for *new* street tree planting. Monies in the Street Tree Maintenance Fund, which funds the activities of the StreetTreeSF Program as established by Proposition E and to which the City is required to make annual contributions, cannot be used for new tree planting, only replacement tree planting. As a result, StreetTreeSF is able to plant replacement trees when street trees need to be removed, but cannot fund the planting of new street trees.

The Proposed Ten-Year Capital Plan for Fiscal Years 2022-2031 estimates that the cost for street tree planting and establishment will total \$172 million over the next ten years. Of that \$172 million, only \$16.7 million, or about 10 percent of the estimated costs, has been identified through Proposition K, the City’s half-cent sales tax for transportation projects, and other local sources. This leaves an unfunded need of \$155 million over 10 years, or an average of \$15.5 million each year, for the growth of the City’s street tree canopy.

Friends of the Urban Forest, the City’s largest and oldest non-profit street tree partner, plants and cares for street trees both on behalf of the Department of Public Works and as part of its own non-profit programming. Public Works contracts with Friends of the Urban Forest and other non-profit partners for tree planting. Friends of the Urban Forest receives grants for its programming, most notably from CalFIRE’s Urban and Community Forestry Program,⁸ in addition to significant funding from Public Works, as well as private donations and volunteer work. Friends of the Urban Forest uses some of its funding for the planting and watering of new street trees. Since the launch of StreetTreeSF in FY 2017-18, Friends of the Urban Forest has reported an urban-forestry related budget of \$3.5 million in FY 2017-18, \$2.4 million in FY 2018-19, and \$1.7 million in FY 2019-20. While the funding for new planting done by Friends of the Urban Forest contributes to some of the estimated need for new and replacement tree planting, it is not adequate to close the identified funding gap.

A strategy in the current draft of the City’s Climate Action Plan is to “create permanent funding sources and mechanisms for nature-based solutions,” and recommends the establishment of long-term funding sources that complement Proposition E (StreetTreeSF) for the planting, establishment, maintenance, and stewardship of trees and shrubs in public properties in San

⁸ In FY 2019-20, Friends of the Urban Forest received a grant of approximately \$1.5 million from CalFIRE’s Urban and Community Forestry Program.

Francisco. Similarly, Strategy 4.1.2 in Phase I of the Urban Forest Plan is to develop a cohesive funding program for tree planting.

Conclusion

The City is not planting enough street trees to account for annual tree mortality and to grow the number of street trees in the urban forest, in keeping with the recommendations of several City plans and documents. Although Public Works has included the need for street tree planting in the City's capital plan, neither the Department of Public Works nor any other City agency or body has identified a funding source for new street tree planting to meet the goal of reaching 155,000 street trees by 2034. The Department has also not developed several recommended street-tree related strategies that are critical to the long-term management and growth of the street tree population. As a result of the funding gap, the City is not on track to meet its goal of expanded and equitable access to the street trees of San Francisco and their associated benefits. Without an increase in the City's urban canopy and without policy to guide the planting strategy and a long-term tree management plan, the distribution of the City's urban canopy and its benefits will remain uneven across different neighborhoods of the City.

Recommendations

The Director of the Department of Public Works should:

- 8.1 Work with partner agencies, including the Urban Forestry Council, Friends of the Urban Forest, the Planning Department, and the Department of the Environment, to develop the citywide street tree management plan. In the management plan, increasing the street tree population in areas of the City with low street tree population numbers should be prioritized. The recently completed street tree planting strategy and the proposed citywide street tree management plan should be presented to the Board of Supervisors for review no later than June 30, 2022.
- 8.2 As part of the street tree management plan, develop a street tree planting funding strategy to support the City's new planting needs, including the use of state and federal grants, local bonds, General Fund support, and private charitable donations, that will supplement the existing funding for new tree planting.

The Board of Supervisors should:

- 8.3 Review the street tree planting funding strategy prepared by the Department of Public Works in accordance with recommendation 8.2 above and consider allocating General Fund support to the planting of new trees to close estimated annual funding gaps.

Benefits and Costs

Implementation of the proposed recommendations would ensure the City has a long-term plan for the management and growth of the City's street trees, which provide benefits to residents and are a component of reducing greenhouse gas emissions. A citywide street tree planting strategy that prioritizes areas of the City with low street tree population will increase the equity of the distribution of street tree benefits. Depending on the street tree planting funding strategy and other identified sources of funding, growing the City's street tree population as recommended in the Urban Forest Plan may require annual General Fund support, which could total approximately \$155 million over ten years (as estimated in the Proposed Capital Plan for Fiscal Years 2022-2031), or \$15.5 million annually, if no new funding sources are identified.

9. StreetTreeSF Data Asset Management Limitations

The current data asset management systems used by StreetTreeSF were not designed specifically for tree maintenance and urban canopy management and were instead adapted from preexisting Department of Public Works data management systems. We found that the current data management infrastructure produces unreliable reports for basic measures of tree and sidewalk work completed. This data reliability challenge has led to inaccurate public reporting and hinders the program from accurately tracking its progress over time. We recommend that StreetTreeSF follow through on ongoing efforts to evaluate its current asset management systems, identify gaps, and establish a roadmap to a more robust asset management program.

Current Data Asset Management Yields Unreliable Information

StreetTreeSF experiences challenges in reporting basic measures of tree and sidewalk work completed, such as the number of trees pruned and the square feet of sidewalk repaired. Our review found that the amounts of work completed, including the number of trees pruned and square feet of sidewalk repaired, that were reported in StreetTreeSF's annual reports for FY 2017-18 and FY 2018-19 could not be reconciled to supporting documentation. Ideally, the program should use a single data management system that allows it to track work performed by internal and external crews and produce reliable reports for public reporting and performance evaluation. The current legacy systems adapted from other Department uses are not well suited to the needs of StreetTreeSF and could compromise the public's trust in the program's reports as well as the program's ability to track and assess its performance over time.

Counting trees pruned

The FY 2017-18 and FY 2018-19 annual reports for StreetTreeSF both presented inaccurate information on the total number of trees pruned in each fiscal year largely because the program does not currently use a single data management system that produces reliable reports. The FY 2018-19 Annual Report, for example, cited 13,757 trees pruned, but supporting data provided to the audit team led to a revised total of 11,650—a reduction of 18 percent. The revised total is derived by counting both “single-asset” and “multi-asset” service orders completed by internal crews. Single-asset service orders refer to one tree per service order and are most commonly used in response to a 311 request. A multi-asset service order refers to multiple trees within a single service order, such as for block pruning and maintenance. Multi-asset service orders must be counted differently in order to arrive at the correct total of trees pruned, an issue that was brought to light as a result of this audit. Separately, the program also tracks the number of trees pruned by contractors.

Operating separate data systems to track and manage work performed by internal versus external crews and the error associated with multi-asset service orders led us to conclude that the program is in need of a single robust asset management program that is tailored to its specific needs. As of the writing of this report, the program has not released its FY 2019-20 Annual Report. An improved asset management system would enable the program to prepare timely and reliable public-facing annual reports and internal reports to track progress against metrics. In its July 2017 Implementation Plan, Bureau of Urban Forestry staff specified a goal of completing all tree pruning in their purview—under a “worst first” prioritization system—within three years, with routine pruning of street trees “anticipated to begin in 2020.” While this goal has not been achieved, a single robust asset management program would enable the program to accurately understand and report its progress.

Counting square feet of sidewalk repaired

We identified similar, though less severe, issues in the program’s reporting of the total square feet of sidewalk repaired by internal crews in the FY 2017-18 and FY 2018-19 annual reports. The Bureau of Urban Forestry reported that the cement supervisor must conduct a manual review of sidewalk repair work in order to determine the total number of square feet to report in the StreetTreeSF Annual Report. When the audit team requested the back-up detail for these numbers, the Bureau of Urban Forestry provided totals that varied, as displayed in Exhibit 9.1 below. The Bureau of Urban Forestry has cited several possible reasons for the discrepancy in the total number of square feet of sidewalk repaired, including the different users’ methodology for pulling the data, the time lag associated with pulling the two different sets of data (with closed-out service orders leading to a change in numbers), and human error. Once again, we find that a single robust asset management system would enable the program to accurately report information and better understand why totals may shift over time.

Exhibit 9.1: Discrepancy in Reported Square Feet of Sidewalk Repaired by Internal Crews

	FY 2017-18	FY 2018-19	FY 2019-20
Previous Total Reported ²	43,295	36,391	52,710 ¹
Amount Reported to Audit Team	41,570	39,665	54,737
Difference	1,725	(3,274)	(2,027)
Percent Difference	4.0%	9.0%	3.8%

Source: DPW

¹This figure is from a draft copy of the FY 2019-20 Annual Report.

²Square feet total in Annual Reports also includes cement work performed by contractors, Bureau of Street Use and Mapping Sidewalk Inspection and Repair Program (BSM SIRP), and Bureau of Street Management Accelerated Sidewalk Abatement Program (BSM ASAP).

Information technology resources

StreetTreeSF management recognize the deficiencies of their current data management systems and have taken steps to address the situation, but have not rectified the problem to date. The authorized position of 1054 IS-Business Analyst-Principal for StreetTreeSF is intended to provide dedicated information technology support for the program's asset management system, according to Bureau of Urban Forestry staff. Department staff reported at our exit conference, after the completion of our audit fieldwork, that the position had recently been filled after remaining unfilled since the inception of the program. This position would represent the first staff who would support the information technology and asset management needs of the StreetTreeSF program on a full-time basis.

The Department of Public Works has entered into a contract for enterprise asset management consulting services to "assess the state of [DPW's] current asset management program, processes, controls, and systems. The objective is to identify gaps in these areas and recommend remediation and a roadmap for the implementation of a robust, mature asset management program." The Bureau of Urban Forestry reported that this work is necessary because the existing data systems were not designed for the asset management needs of the relatively new StreetTreeSF program, and our audit finding supports this assessment.

Conclusion

StreetTreeSF experiences challenges in reporting basic measures of tree and sidewalk work completed, such as the number of trees pruned and the square feet of sidewalk repaired. Our review found that the annual reports for FY 2017-18 and FY 2018-19 included amounts for the number of trees pruned and square feet of sidewalk repaired that could not be reconciled to supporting documentation. The FY 2017-18 and FY 2018-19 annual reports for StreetTreeSF both presented inaccurate information on the total number of trees pruned in each fiscal year largely because the program does not currently use a single data management system that produces reliable reports. We identified similar, though less severe, issues in the program's reporting of the total square feet of sidewalk repaired by internal crews in the FY 2017-18 and FY 2018-19 annual reports.

StreetTreeSF management recognize the deficiencies of their current data management systems and have taken steps to address the situation, but have not rectified the problem to date. The Department has not retained staff who support the information technology and asset management needs of the StreetTreeSF program on a full-time basis, though program management reported at our audit exit conference that they were able to recently hire a full-time IS-Business Analyst position.

Recommendations

The Board of Supervisors should:

- 9.1 Request that the Acting Director of Public Works or his designee report to the Government Audit and Oversight Committee on the findings and recommendations associated with the consultant's review of the Department's asset management system once completed, but not later than June 30, 2022.
- 9.2 Further, request that the Superintendent of the Bureau of Urban Forestry report back to the Government Audit and Oversight Committee on actions taken to implement a robust asset management system for StreetTreeSF not later than June 30, 2022.

The Superintendent of the Bureau of Urban Forestry should:

- 9.3 Ensure that the new asset management system is designed in a way to: (a) enable the StreetTreeSF program to filter exclusively for maintenance and sidewalk repair work funded by Proposition E and (b) limit the need for manual human review of data as a prerequisite to ensure accuracy.
- 9.4 Issue a revised FY 2018-19 Annual Report that corrects errors in the number of trees pruned and square feet of sidewalk repaired.

Benefits and Costs

Implementation of the proposed recommendations would require the Department to incur costs associated with implementing a single robust data asset management system; however, the Department has already embarked on this process through its consulting contract. If implemented, these recommendations would lead to more accurate measuring and reporting of StreetTreeSF productivity, which is core to the effectiveness of the program. Given that the current data management systems have contributed to unreliable public reporting and impaired the ability to accurately assess progress, this investment is worthwhile to ensure the StreetTreeSF program is administered effectively.

Written Response From the Department of Public Works



Alaric Degrafinried, Acting Director | Director's Office

alaric.degrafinried@sfdpw.org | T. 628.271.2677 | 49 South Van Ness Ave. Suite 1600, San Francisco, CA 94103

To: Dan Goncher, Principal
San Francisco Board of Supervisors, Budget and Legislative Analyst

From: Alaric Degrafinried, Acting Director *a*
San Francisco Public Works

Date: June 11, 2021

Re: Response to the Performance Audit of the Street Resurfacing Program and StreetTreeSF

San Francisco Public Works thanks the Budget and Legislative Analyst for auditing our Street Resurfacing Program and StreetTreeSF tree maintenance initiative. We appreciate the opportunity we were given to review and comment on the draft document and to submit a formal response to the recommendations. Both programs serve important roles in San Francisco.

The Street Resurfacing Program works around the clock to ensure that the City's 900-plus miles of roadway are well maintained for the safe mobility of motorists, bicyclists, pedestrians and transit users, as well as for the transport of goods to keep our city functioning.

StreetTreeSF provides the department's Bureau of Urban Forestry with a source of sustainable funding to properly maintain the City's 125,000-plus street trees, providing a strong foundation to help it thrive and bolster the environmental and neighborhood livability benefits that trees provide.

We share the Budget and Legislative Analyst's goal of improving the efficiency and effectiveness of these two programs to better serve San Francisco's diverse constituencies.

Identifying and securing sufficient and sustainable funding remains our department's biggest challenge, but we remain committed to employing innovation, best practices and tested experience to deliver on these vital services.

We are grateful for the Budget and Legislative Analyst's findings that our Street Resurfacing and StreetTreeSF programs already have led to improvements in the condition of the City's streets and the vitality of the urban forest. That said, we are confident that more can be achieved by expanding how we track and use data and by strengthening partnerships to generate support for adequate resources to deliver an even higher-quality level of service that San Franciscans have a right to expect.

Below are our responses to the Budget and Legislative Analyst's recommendations. You will see that we concur with the vast majority. We look forward to continued collaboration with the Budget and Legislative Analyst, the Board of Supervisors, the Mayor and other community and government partners to advance our shared goal to improve the Street Resurfacing and StreetTreeSF programs.

1. Pavement Condition Across the City

BLA Recommendation The Director of Public Works should:	Response	Comment
<p>1.1 Establish Pavement Condition Index, or other meaningful metric, for each supervisorial district or other meaningful geographic divisions of San Francisco and include this metric in both the Department's internal PublicWorksStat reports and the City's publicly reported Performance Scorecards. If pavement conditions are proposed to be measured other than by Pavement Condition Index score and/or by a geographic divisions other than supervisorial district, report to the Board of Supervisors on the formal metric and formal proposed boundaries for geographic divisions.</p>	<p>Concur</p>	<p>The Public Works Street Resurfacing Program monitors geographic equity with dynamic maps and charts that show our work. We will continue to establish meaningful goals for geographic divisions of San Francisco and include them in our internal PublicWorksStat reports and on publicly reported City Performance Scorecards.</p>

2. Pothole and Patch Paving Service Distribution and Performance Goals

BLA Recommendation The Superintendent of the Bureau of Street and Sewer Repair should:	Response	Comment
<p>2.1 Track and monitor the supervisorial districts or other meaningful geographic divisions of San Francisco in which pothole and patch paving repairs are made in PublicWorksStat reports beginning no later than July 1, 2022. If pothole and patch paving repairs are proposed to be tracked by geographic divisions other than supervisorial district, report to the Board of Supervisors on the formal proposed boundaries of the geographic divisions for approval.</p>	<p>Concur</p>	<p>Public Works, through PublicWorksStat, tracks locations of pothole repair and patch paving repairs, including by supervisorial district, and can add tracking by neighborhood or supervisorial district by July 1, 2022.</p> <p>While PublicWorksStat currently tracks supervisorial districts for potholes and patch paving repairs, this report found a percentage of service requests that were not assigned to any supervisorial district. Public Works will investigate and resolve this issue so the location of a service request by supervisorial district or other meaningful geographical division is tracked easily. This information will be incorporated into a quarterly reporting system so this work can be reviewed and analyzed.</p>
<p>2.2 Define and adopt geographic equity considerations or goals for pothole repair and patch paving services, so that 311 requests are not the only driver of BSSR's pothole repair and patch paving services no later than July 1, 2022.</p>	<p>Concur</p>	<p>Public Works is committed to deploying resources based on published definitions of equity. We are in the process of adding tools beyond 311 requests to deploy patch paving and pothole repair services to ensure equity. In addition to calls for service, Public Works will be guided by industry best practices, our Strategic Plan and Part II of our Racial Equity Action Plan when allocating resources to pothole repair and patch paving.</p>

2.3 As a pilot and as funding allows, consider re-instituting proactive pothole sweeps to assess the impact, if any, on BSSR's response time to 311 requests and the overall distribution of pothole repair and patch paving services. Further, report back to the Board of Supervisors' Government Audit and Oversight Committee no later than June 30, 2022 on the impacts to BSSR's response time with the use of proactive pothole sweeps, and whether funding requirements are needed to meet both the responsiveness goal and proactive sweep recommendation.	Concur	Public Works would welcome the expansion of proactive pothole sweeps and will reinstitute them subject to being provided sufficient funding to develop and implement a strategy and workplan.
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3. Street Resurfacing Change Order Review Process

BLA Recommendation The Department of Public Works Finance and Administration team should:	Response	Comment
3.4 Work with the Office of Contract Administration, City Purchaser, and City Administrator to agree upon and implement a common contract approval information system or tool to track the City Purchaser's approval actions.	Concur	Public Works has robust internal systems in place for the workflow review and approval, as well as a document repository for all change orders. Public Works will work with the Office of Contract Administration to identify a solution that meets the needs of both departments.

4. Funding Sustainability for Street Resurfacing

BLA Recommendation The Director of Public Works should:	Response	Comment
4.1 Prepare an action plan to be provided to the City Administrator and Board of Supervisors that includes strategies for ensuring that the City obtains sufficient funding to meet its road resurfacing goals.	Concur	Maintaining reliable, sustainable, stable and perpetual funding sources for a street resurfacing budget is a challenge. The City's 10-year Capital Plan identifies the funding needed to maintain a regionally tracked Pavement Condition Index (PCI) score of 75. After updating funding projections, including gas tax revenue information, Public Works will provide the City Administrator, Capital Planning, the Mayor's Budget Office and Board of Supervisors funding scenarios and potential strategies to fully fund the 10-year Capital Plan goal and improve the score to the mid-80s range (state of good repair). Support from local funding sources, such as the General Fund, continues to be a critical source of funding for the Street Resurfacing Program. The 2011 Road Repaving and Street Safety Bond, approved by San Francisco voters, was pivotal in allowing Public Works to get on track to achieve steady improvement to the PCI score.

5. StreetTreeSF Baseline Pruning Progress

BLA Recommendation The Superintendent of the Bureau of Urban Forestry should	Response	Comment
<p>5.1 Establish a realistic annual goal for the number of StreetTreeSF trees to be pruned in each fiscal year, and report on the program's performance in meeting the annual pruning goal in annual reports and other communications to the public and the Board of Supervisors.</p>	<p>Concur</p>	<p>The department adopted the urban forest relatively recently and by design the focus has been on getting all trees to baseline. Many trees suffered from deferred maintenance of private owners or fluctuations in department funding and pruning needs vary by species. However, the department will establish annual goals for pruning.</p>
<p>5.2 Establish a realistic annual goal for the number of StreetTreeSF tree-related cement repair sites to be completed in each fiscal year, and report on the program's performance in meeting the annual repair goal in annual reports and other communications to the public and the Board of Supervisors.</p>	<p>Concur</p>	<p>Nature is unpredictable. Site conditions around trees vary based on tree species, the impact of wind, the impact of rain (or drought) and the time between maintenance work. However, the department will establish annual goals.</p>

6. StreetTreeSF Staff Vacancies

BLA Recommendation The Superintendent of the Bureau of Urban Forestry should	Response	Comment
<p>6.1 Work with the Department of Human Resources to develop a recruitment for 3434 Arborist Technicians that is specific to the Department of Public Works.</p>	<p>Concur</p>	<p>Public Works will work with the Department of Human Resources on 3434 Arborist Technicians recruitments for Public Works. Allowing Public Works to recruit for street tree pruning and not compete with other departments would likely result in more successful recruitments.</p>
<p>6.2 Restructure the Arborist Apprentice Program, such as revising the cohort size of arborist technicians to apprentices and the training schedule, so that the program can begin to fill these positions and develop a pipeline for the arborist technician role.</p>	<p>Concur</p>	<p>Public Works supports robust apprenticeship programs that create pipelines into our workforce, and include a pool of diverse, eager and qualified candidates. The department looks forward to finding additional ways to restructure the Arborist Apprentice Program.</p>

7. Geographic Distribution of StreetTreeSF Services

BLA Recommendation The Superintendent of the Bureau of Urban Forestry should	Response	Comment
7.1 Consider re-evaluating and re-prioritizing the uncompleted street tree and cement repair work keymaps using additional criteria, including geographic location, for program activities once the keymaps are in the “green” or lowest priority tier.	Concur	Safety is always the top priority of the department. Public Works adopted the City’s urban forest relatively recently. By design, the focus has been on getting all street trees to baseline. When the Bureau of Urban Forestry reaches the point when most trees and sidewalks have relatively equal public safety risks, the department will prioritize work within those tiers, including geographic considerations.

8. Street Tree Canopy Growth and Geographic Distribution

BLA Recommendation The Director of Public Works should:	Response	Comment
8.1 Work with partner agencies, including the Urban Forestry Council, Friends of the Urban Forest, the Planning Department, and the Department of the Environment, to develop the citywide street tree management plan. In the management plan, increasing the street tree population in areas of the City with low street tree population numbers should be prioritized. The recently completed street tree planting strategy and the proposed citywide street tree management plan should be presented to the Board of Supervisors for review no later than June 30, 2022.	Partially Concur	As noted, the department has developed the street tree planting strategy with nonprofit partners and SF Planning data. Public Works will develop the street tree management plan.
8.2 As part of the street tree management plan, develop a street tree planting funding strategy to support the City’s new planting needs, including the use of state and federal grants, local bonds, General Fund support, and private charitable donations, that will supplement the existing funding for new tree planting.	Concur	Public Works would welcome additional advocates for sufficient, steady and predictable funding to meet the City’s planting needs. In order to develop a sound and effective street tree planting funding strategy, Public Works depends on the leadership of the Mayor and Board of Supervisors to commit to multiple years of baseline funding to execute the

		plan. Voters also could pass a bond to fund tree planting.
--	--	--

9. StreetTreeSF Data Asset Management Limitations

BLA Recommendation The Superintendent of the Bureau of Urban Forestry should	Response	Comment
9.3 Ensure that the new asset management system is designed in a way to: (a) enable the StreetTreeSF program to filter exclusively for maintenance and sidewalk repair work funded by Proposition E and (b) limit the need for manual human review of data as a prerequisite to ensure accuracy.	Concur	The Bureau of Urban Forestry identified this need prior to implementation of the StreetTreeSF program, and the department already has received the consultant's recommendations for asset management. The department will prioritize the Bureau of Urban Forestry for implementation of the department's asset management program
9.4 Issue a revised FY 2018-19 Annual Report that corrects errors in the number of trees pruned and square feet of sidewalk repaired.	Complete	Implemented. The report already has been revised to correct errors.

Written Response From the Office of Contract Administration



June 10, 2021

Dan Goncher
Principal Budget and Legislative Analyst
San Francisco Board of Supervisors
City Hall, Room 244
1 Dr. Carlton B. Goodlett Place
San Francisco, CA 94102-4689

Re: Audit of the StreetTreeSF Program and Street Resurfacing/Pothole Repair Program

Dear Mr. Goncher:

Thank you for providing the Office of Contract Administration (OCA) the opportunity to review and comment on Section 3 of the audit report entitled "Audit of the StreetTreeSF Program and Street Resurfacing/Pothole Repair Program." As detailed below, OCA generally concurs with each recommendation and welcomes the opportunity to continue working with the Board of Supervisors (BOS), the Department of Public Works (PW), the Office of the Controller (CON), and the City Attorney's Office (CAT) in the facilitation and implementation of each audit recommendation.

Audit Recommendation 3.1: Audit Recommendation 3.1 pertains to the establishment of written guidelines governing the Purchaser's review process for PW Chapter 6 contracts, which are to specify the grounds for delaying, modifying, or rejecting change orders and other contract actions. OCA recognizes the importance of such written guidance, and to date, has taken several steps towards issuance of final guidelines. OCA has consulted with construction and contract management experts at PW and contracts Deputy City Attorneys regarding Chapter 6 contracting requirements. This consultation, as well as the Purchaser's review of PW contracts over several months has helped to form the basis for detailed guidelines on contract approvals. At this time, OCA has developed draft recommendations regarding approval/rejection criteria by contract type, as well as recommendations for further delegation of review authority. OCA will continue to work with construction and contracts experts to refine these criteria, in order to expeditiously issue the written guidelines.

Audit Recommendation 3.2: PW, in consultation with OCA, developed a contract checklist and cover memo form that provide detailed information regarding requested contract approvals. PW has been using these forms when requesting contract approval from the time the delegated approval authority went into effect. However, over time, OCA has identified areas for improvement in these forms (such as additional documentation to justify sole source contracts). As such, OCA agrees that a revised contract approval checklist and process document that specify additional important documentation requirements and approval criteria by Chapter 6 contract type, as well as validation by PW engineers of the cost and duration estimates, will ensure greater accountability with regard to contract costs and contract duration, increase transparency and consistency of OCA's review and



approvals, and speed the Purchaser's review. OCA shall work to develop such documents.

Audit Recommendation 3.3: OCA is in full support of a revision to the delegation of the Mayor's authority. As noted in the audit report, the Mayor's delegation of authority for review and approval of PW Chapter 6 contracts, as written, does not allow the current Acting Director of OCA and Purchaser to further delegate this decision-making authority to other employees in OCA, creating risk of delays due to potential absence of or turnover in the Acting Director/Purchaser position. Revising the delegation of authority by the Mayor, as recommended, will minimize this risk.

Audit Recommendation 3.4: While not directed specifically at the OCA, OCA fully supports this recommendation to implement a common contract approval system to manage the workflow. In fact, OCA has twice requested PW utilize such a system (OCA's existing contract approval system) to ensure full transparency in the contract approval actions. OCA will continue to work with PW to agree upon and implement a common approval system and workflow.

Note that the Benefits and Costs portion of Section 3 indicates implementation of the proposed recommendations would not require significant staff resources. While true, it is important to note that the delegated contract approval authority itself is a new responsibility for OCA and this new contract review duty has had an impact on the department's resource capacity.

Once again, we thank you for the opportunity to review and comment on the audit report.

Regards,

Sailaja Kurella
Acting Director and Purchaser



Urban tree canopy hearing

*Public Safety and Neighborhood
Services Committee
October 14, 2021*



Trees for our hotter future

San Francisco is home to 669,000 trees. This satellite data shows where they're planted

By [NAMI SUMIDA](#) | Sept. 27, 2021 4:00 a.m.

**Since When Have Trees Existed
Only for Rich Americans?**

How America's hottest city is trying to cool down

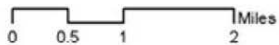
Can trees help save Phoenix from extreme heat?

By Joss Fong | joss@vox.com | Sep 20, 2021, 1:20pm EDT

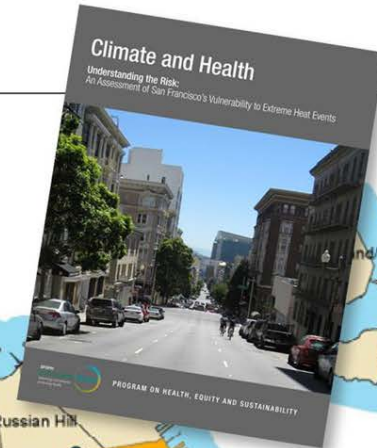
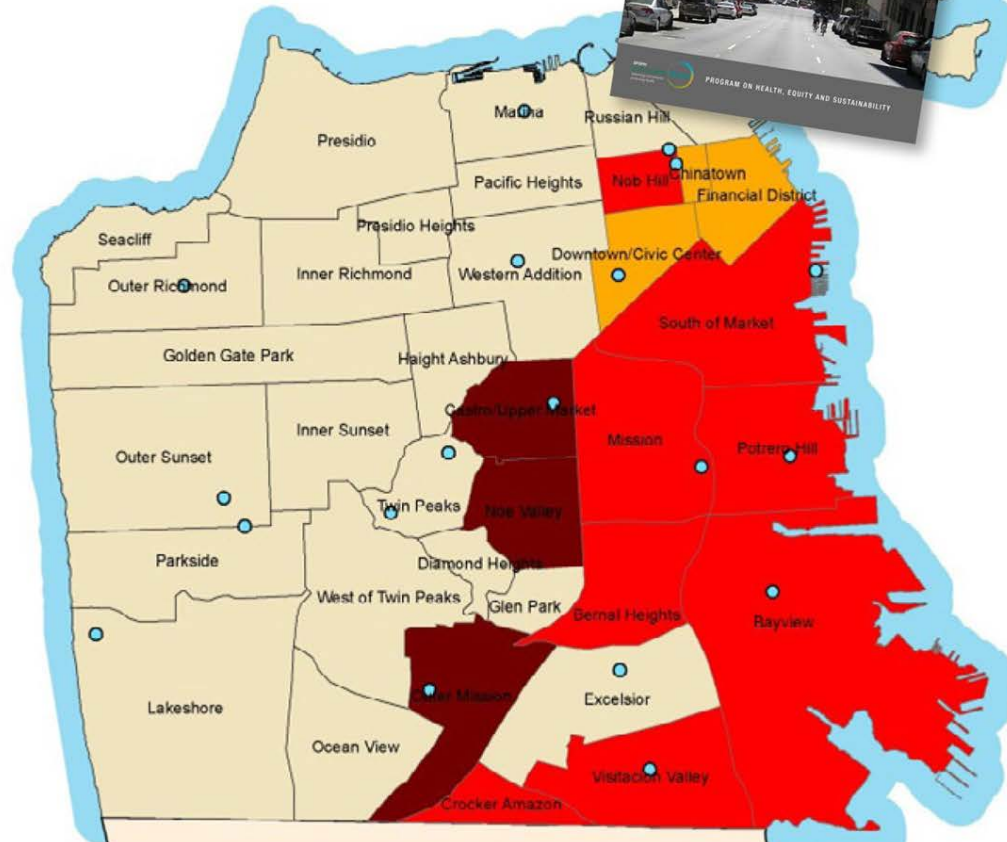
Trees for our hotter future



Warm Neighborhoods Prediction

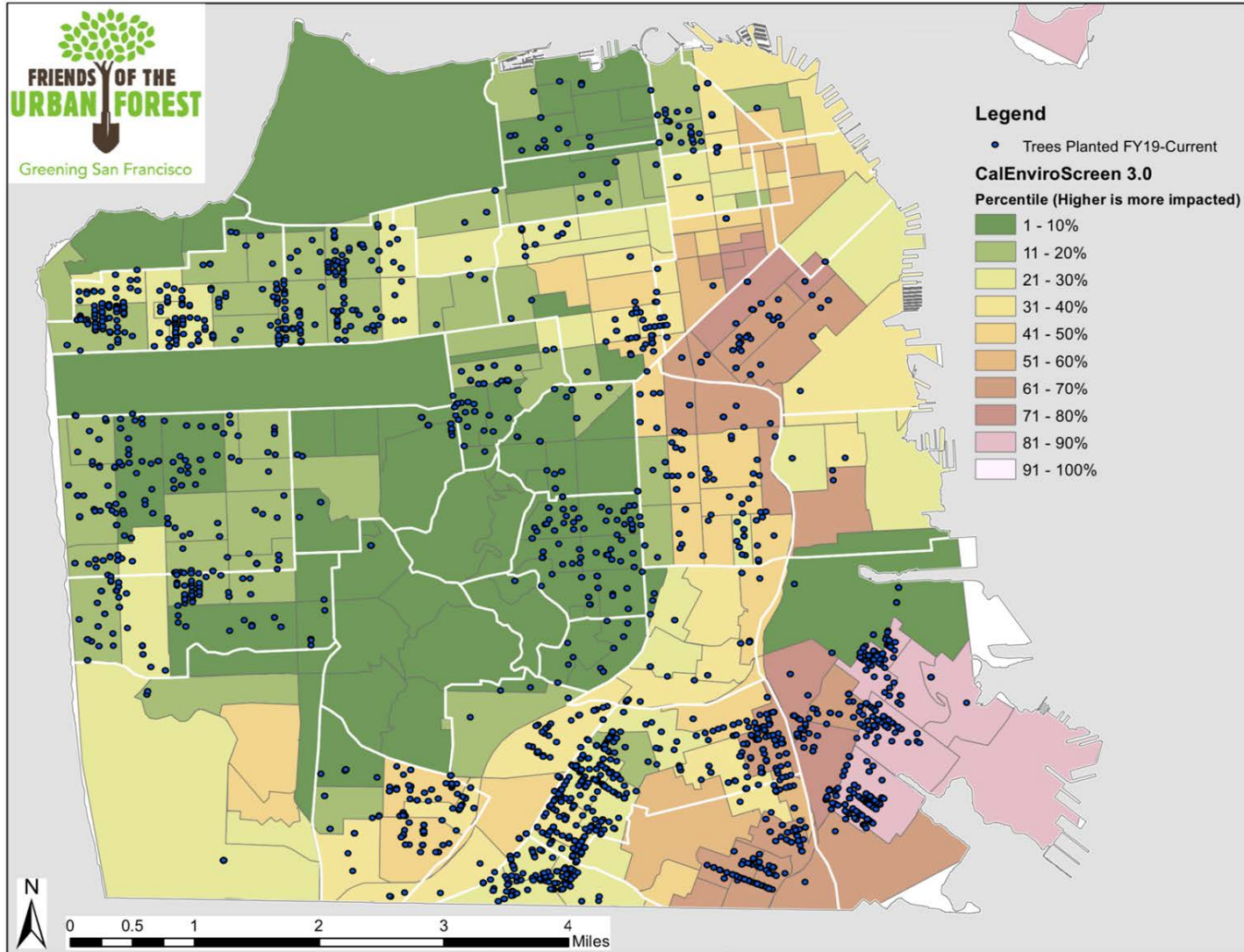


City and County of San Francisco
Department of Public Health
Environmental Health Section

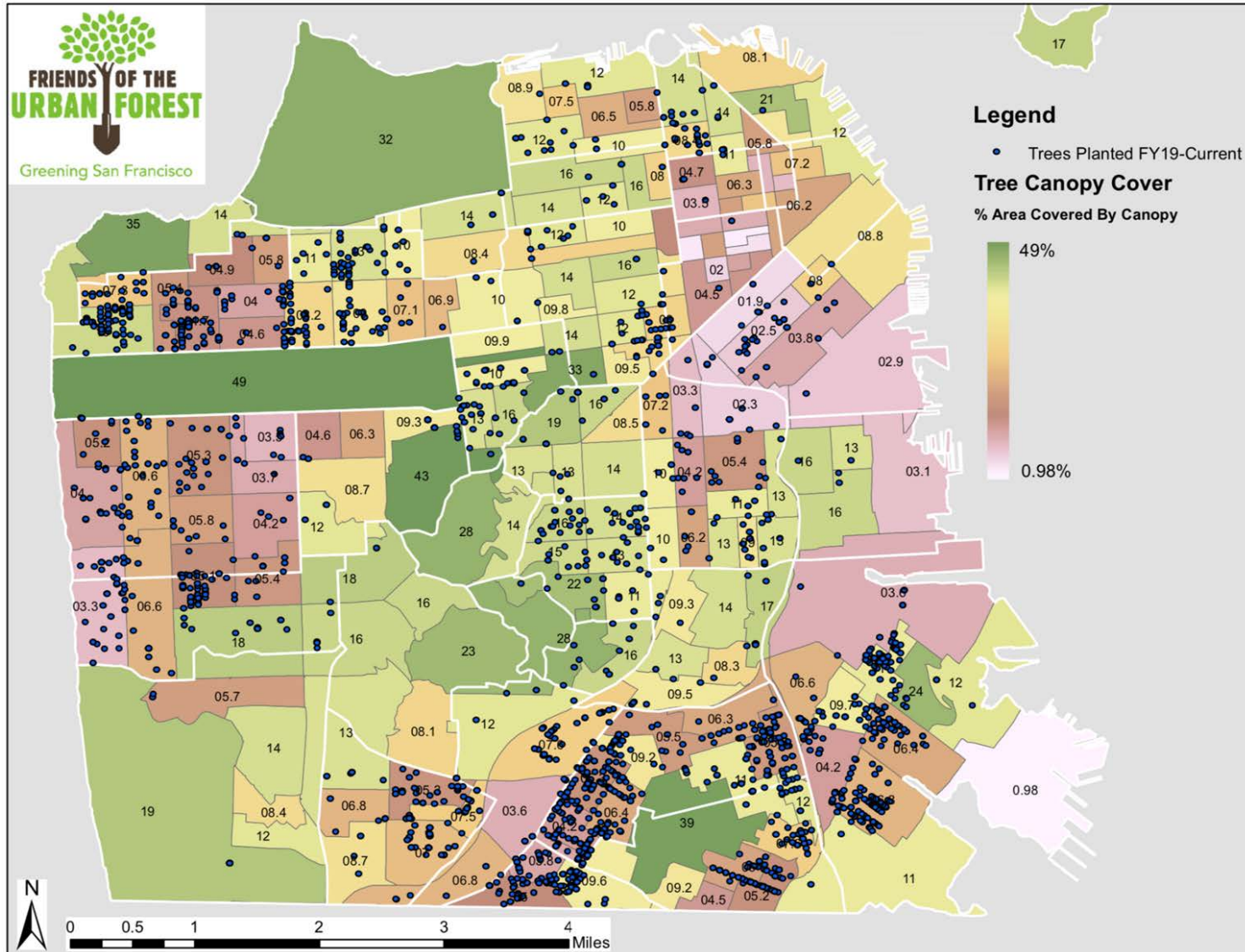


Graphic from the SFDPH Program on Health, Equity and Sustainability

Where we plant



Where we plant



Our climate emergency plan

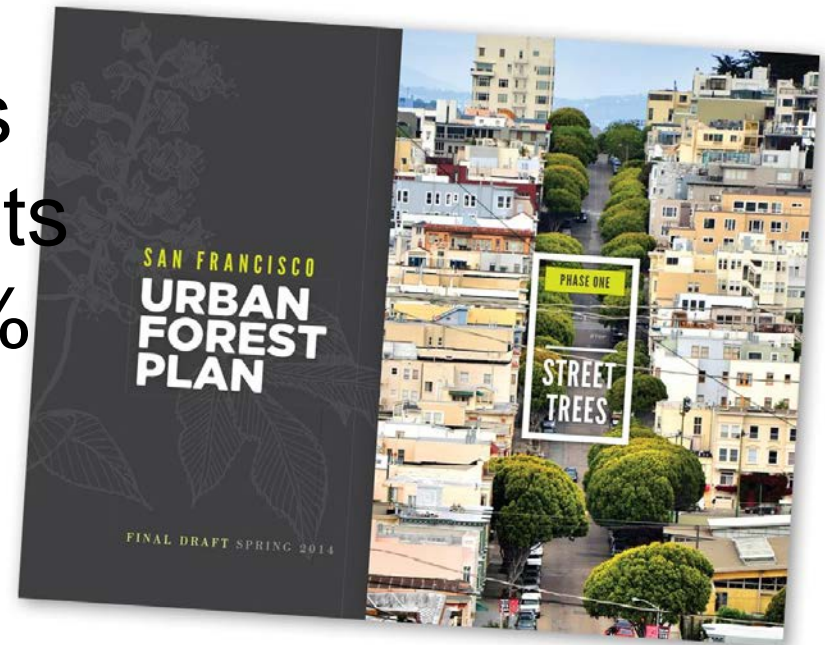
San Francisco's 0-80-100-Roots Climate Action Framework calls for a well-developed urban canopy.



Graphic from SF Environment report Focus 2030: A Pathway to Net Zero Emissions

How “green” are we really?

The San Francisco Urban Forest Plan calls for the city to increase its tree canopy from 13.7% (among the smallest of any major U.S. city) to 25%.



Urban Forestry

*Tree Management & Tree Maintenance on
San Francisco Parklands*

October 14, 2021

Trees on Parkland

- San Francisco lacks a native forest
- Most of the mature trees in the City's parks were planted in the late 1800s and early 1900s
 - Large stands of even-aged trees
 - Monocultures in unmaintained open space
- We have an estimated 131,000 trees on San Francisco parkland

Urban Forestry Resources -- Staffing

- 1 Chief Urban Forester
- 4 Arborist Supervisors
- 11 Arborist Technicians
- 2 Reforestation Supervisors
- 12 Reforestation Gardeners
- 4 Laborers
- Total FTE: 34 positions

Urban Forestry Resources – Funding

Operating (salaries, benefits): \$5,640,000

Equipment: \$ 170,000

Materials & Supplies: \$ 173,000

Total Operating Budget: \$5,983,000

Contracting funds: \$1,000,000

Urban Forestry Bond Program: \$2,000,000

Urban Forestry Tree Management

- Goal: 15-year Tree Management Cycle
 - Perform programmatic tree maintenance on each park tree in maintained open space on a scheduled 15-year program
 - *Proactive* tree management
- Current tree maintenance is primarily reactive, with larger programmatic tree maintenance projects performed by contract based on tree assessment data.

Tree Assessments

- Tree Assessments accomplish the following:
 - Survey and inventory all trees on a park site
 - Assess suitability for preservation
 - (health, structural integrity, species response, age & longevity, invasiveness)
 - Assign risk rating
 - (Risk Rating = failure potential + size of defective part + target rating)
 - Make tree maintenance recommendations

Tree Assessments - continued

RPD compiles Tree Assessments from 3 sources

- Commissioned by Operations for ongoing maintenance planning
- Commissioned by Capital for specific capital projects
- Received from 'Friends of ...' groups associated with various parks

Since 2004, we have compiled nearly 100 Tree Assessments

In our Strategic Plan, we commit to annually commissioning Tree Assessments commensurate with our capacity to complete all recommended tree work within the following fiscal year

Tree Assessments -- continued

Tree Assessments have a shelf life -- trees are living organisms affected by

- Age
- Health -- pathogens and insects
- Weather – storms and drought
- Topography – slope and erosion
- Individual structural integrity within their stand of trees

Tree maintenance recommendations made in a Tree Assessment should be completed relatively soon after publication.

Progress in our 15-year Tree Maintenance Cycle

- RPD Tree Crews perform *reactive* tree maintenance
- RPD Tree Crews perform all tree maintenance recommendations from annual Tree Assessments
- Contract out programmatic (*proactive*) tree maintenance – managed by RPD Chief Urban Forester
- Coordinate with RPD Capital to complete all programmatic tree work at Capital renovation sites at the beginning of each Capital project.
- Tree Management database tool in development to document and manage all tree work – completed and planned – using GIS technology

Reforestation

- Goal is two-for-one replacement for tree removals
- Our tree management goals for Reforestation are
 - Diversified species
 - Staggered age spread
 - Management of pathogens
 - Cultivating the under-story
 - Large-plot tree plantation in Golden Gate Park west end

Urban Forestry

Thank you

Questions?

Park Trees vs. Street Trees

- A very different maintenance challenge
- Difficult access for arborists and equipment
 - Not curbside
 - Uneven terrain – often steep
- Much wider variety of tree species
- Much older and taller trees with expansive canopies and crowns

SFPUC Urban Canopy and Street Tree Maintenance

**Emily Lam
SFPUC**



- 1

Examples of SFPUC Properties

- Lake Merced
- Lombard Reservoir
- O'Shaughnessy Tract
- Sunset Reservoir
- Laguna Honda Reservoir
- Twin Peaks Reservoir
- Summit Reservoir
- Sutro Reservoir



1. Laguna Honda Reservoir Area
2. Sutro Reservoir
3. Summit Reservoir
4. Twin Peaks Reservoir

SFPUC Tree Management

- Proactive Maintenance Measures
 - Maintain a limited number of trees
 - Tree trimming and removal of dead trees
 - Planting of native vegetation
 - Water new trees not yet established

SAN FRANCISCO PUBLIC WORKS

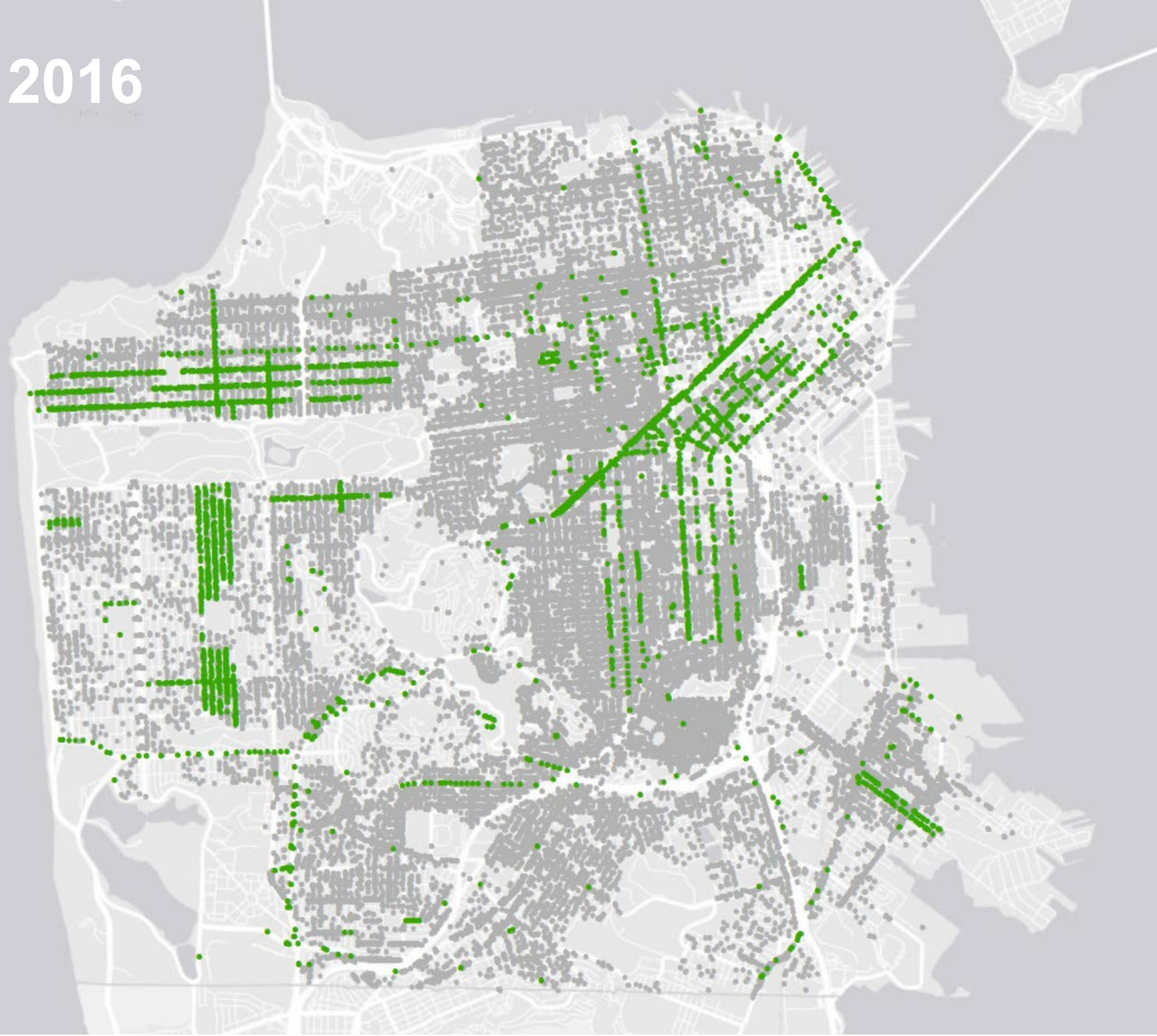
CARING FOR OUR URBAN FOREST: STREET TREE MAINTENANCE & PLANTING

OCTOBER 14, 2021

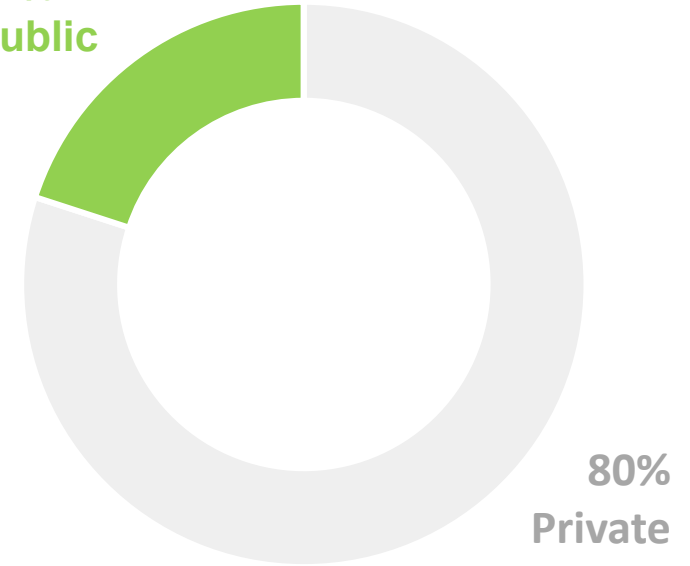
NICHOLAS CRAWFORD
ACTING SUPERINTENDENT-
BUREAU OF URBAN FORESTRY



2016

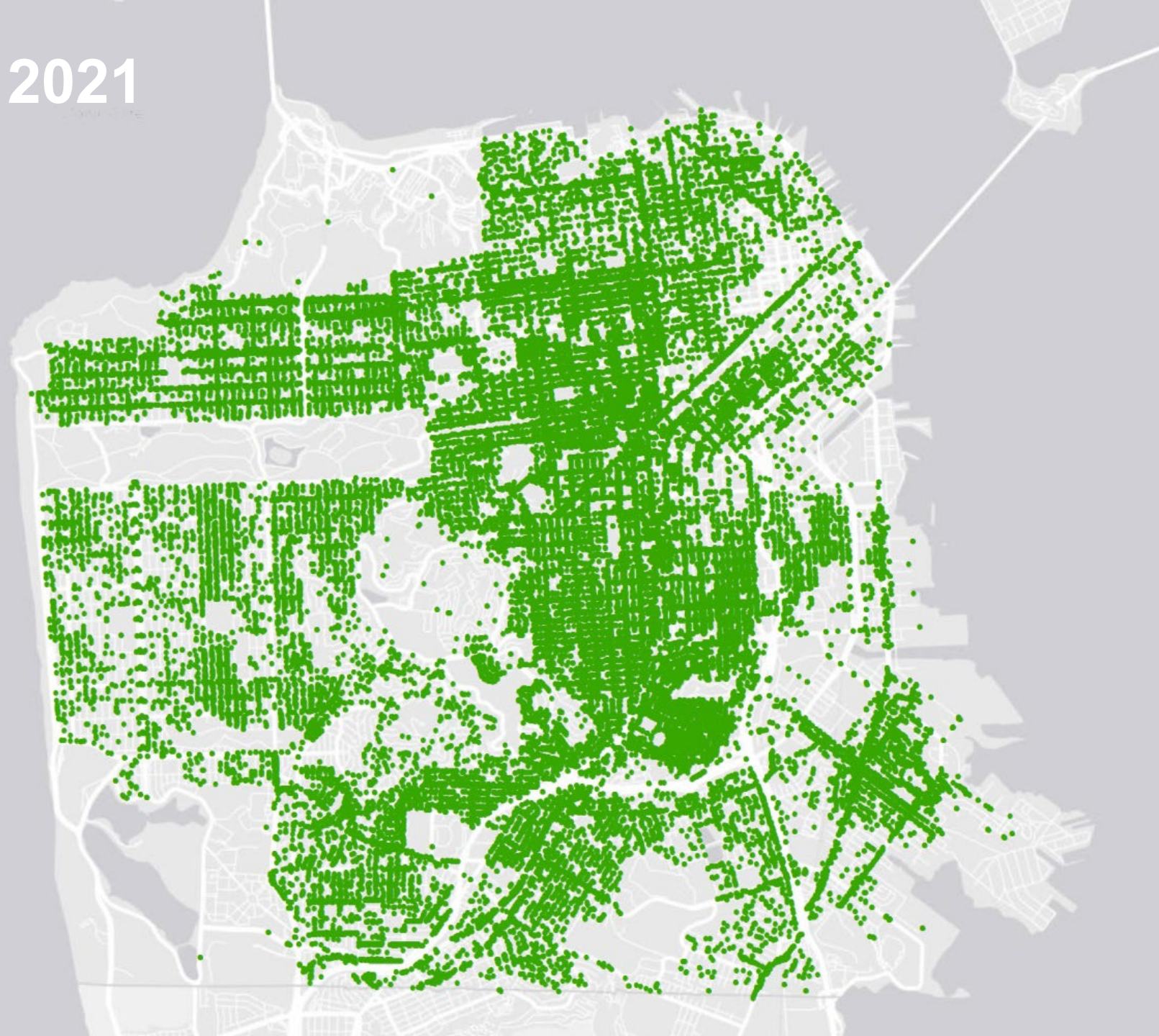


20%
Public



Five years ago,
we were only funded
to care for
28,000
street trees

2021



San Francisco's program
to care for the City's

125,000

street trees

and repair sidewalks
damaged by tree roots.

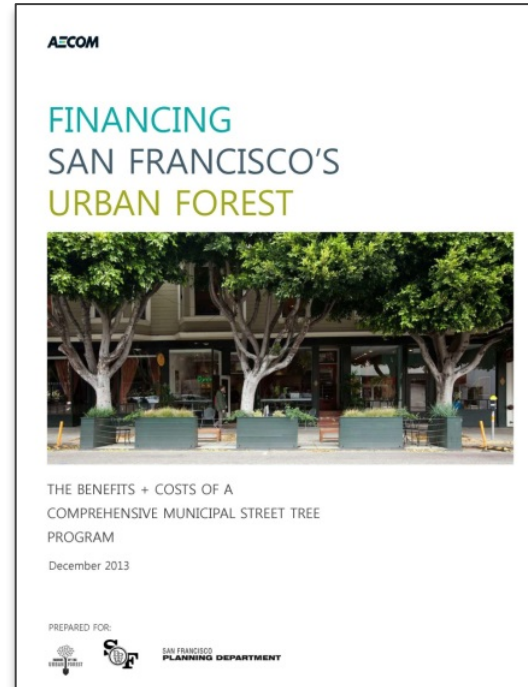
San Francisco Chronicle

For now, property owners stuck with maintaining SF street trees

By Lizzie Johnson and J.K. Dineen | July 20, 2016 | Updated: July 20, 2016 5:18pm



PREPARE A CREDIBLE SOLUTION: **URBAN FOREST PLAN**



----- 2012 -----

URBAN FOREST PLAN

----- 2013 -----

FINANCE STUDY

----- 2016 -----

BALLOT MEASURE

BALLOT MEASURE (2016)

E

Responsibility for Maintaining Street Trees and Surrounding Sidewalks

Shall the City amend the Charter to transfer responsibility from property owners to the City for maintaining trees on sidewalks around their property as well as sidewalks damaged by the trees, and pay for this by **setting aside \$19M** per year from its General Fund, adjusted annually based on City revenues?

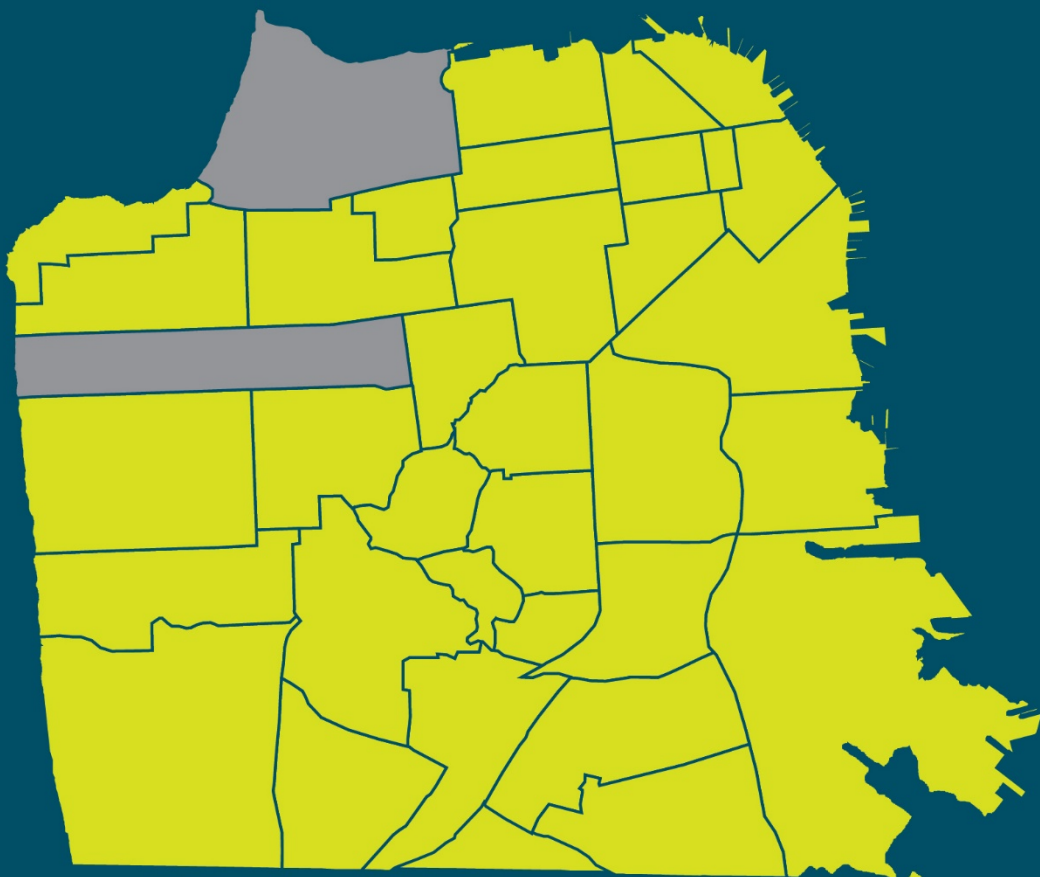


79%

APPROVAL

STREET TREE CENSUS (2017)

ALL OF THE STREET TREES IN SAN FRANCISCO ARE COUNTED!



STREET
TREE
TICKER



1 2 4 7 9 5

street trees

COMPLETED NEIGHBORHOODS 33

VACANT PLANTING SITES 39,582

DIFFERENT TREE SPECIES >500

SIDEWALK DAMAGE LOCATIONS 31,147

UPDATED FEBRUARY 15, 2017



PROGRAM START-UP



HIRING



EQUIPMENT

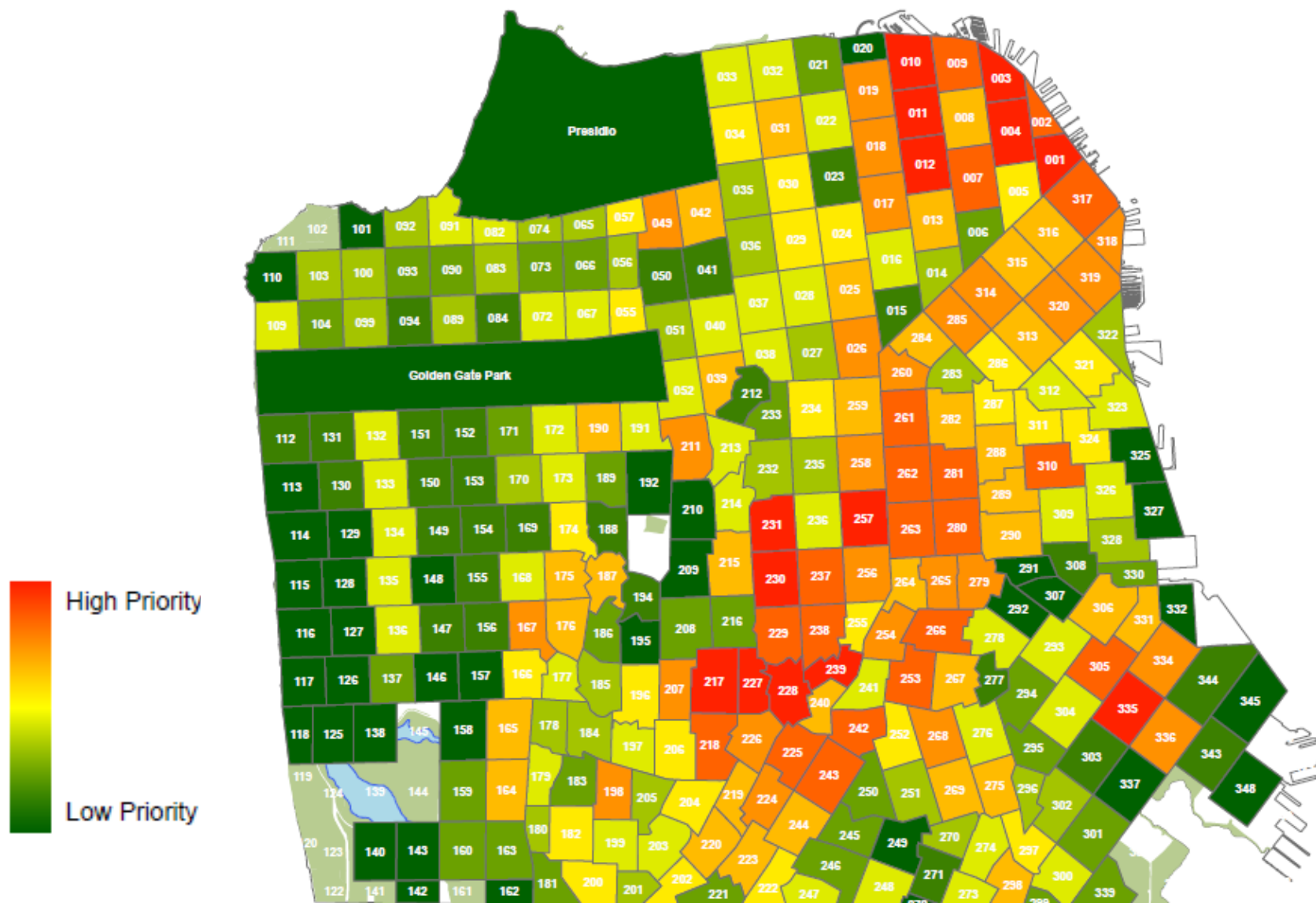


CONTRACTS

TREE MAINTENANCE AND PRUNING



“WORST FIRST” TREES



TREE PRUNING CONDITIONS



TREE PRUNING CONDITIONS



Damage from vehicles

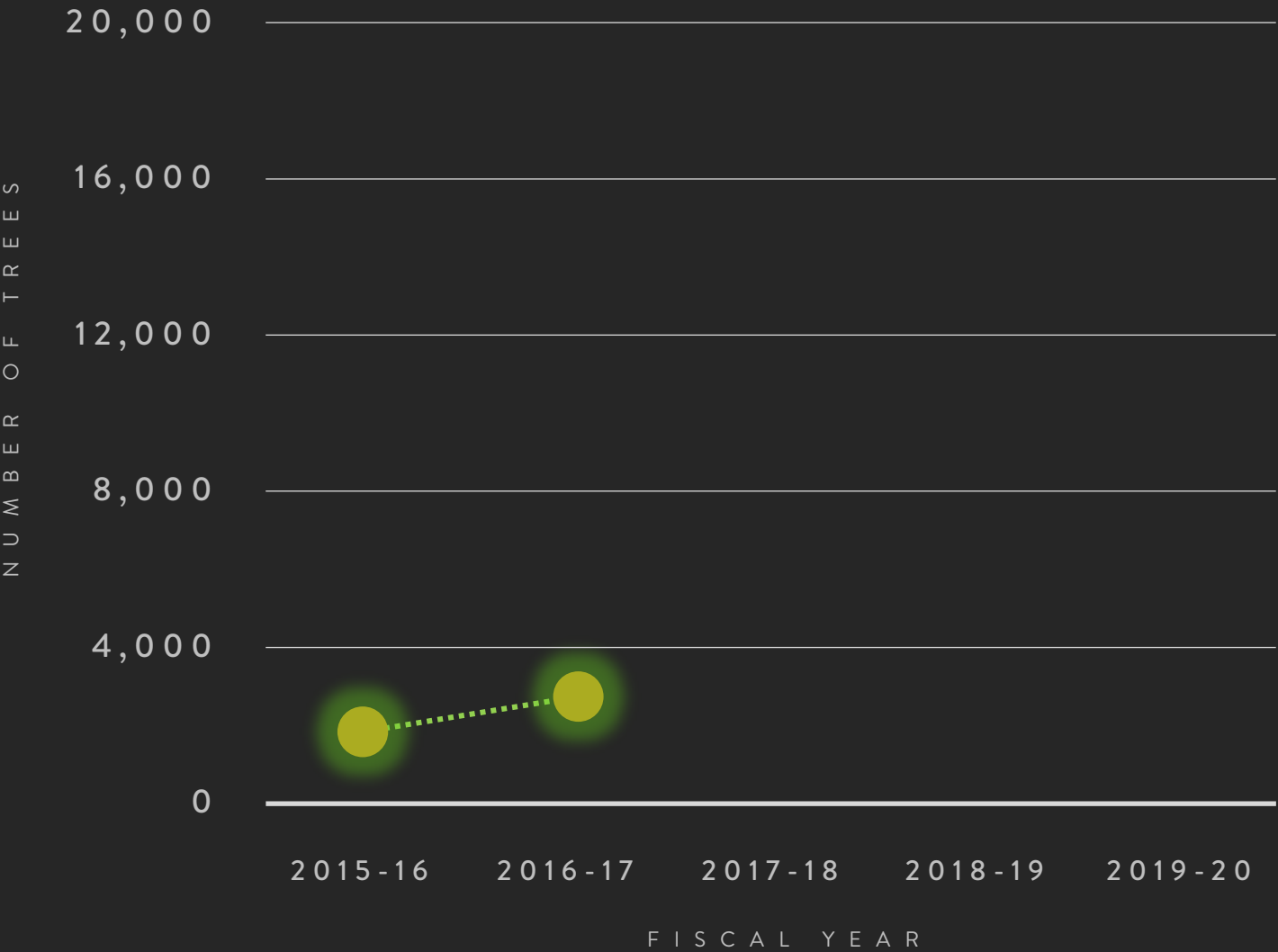


Immediate safety concerns



Sidewalk damage

TREES MAINTAINED ANNUALLY



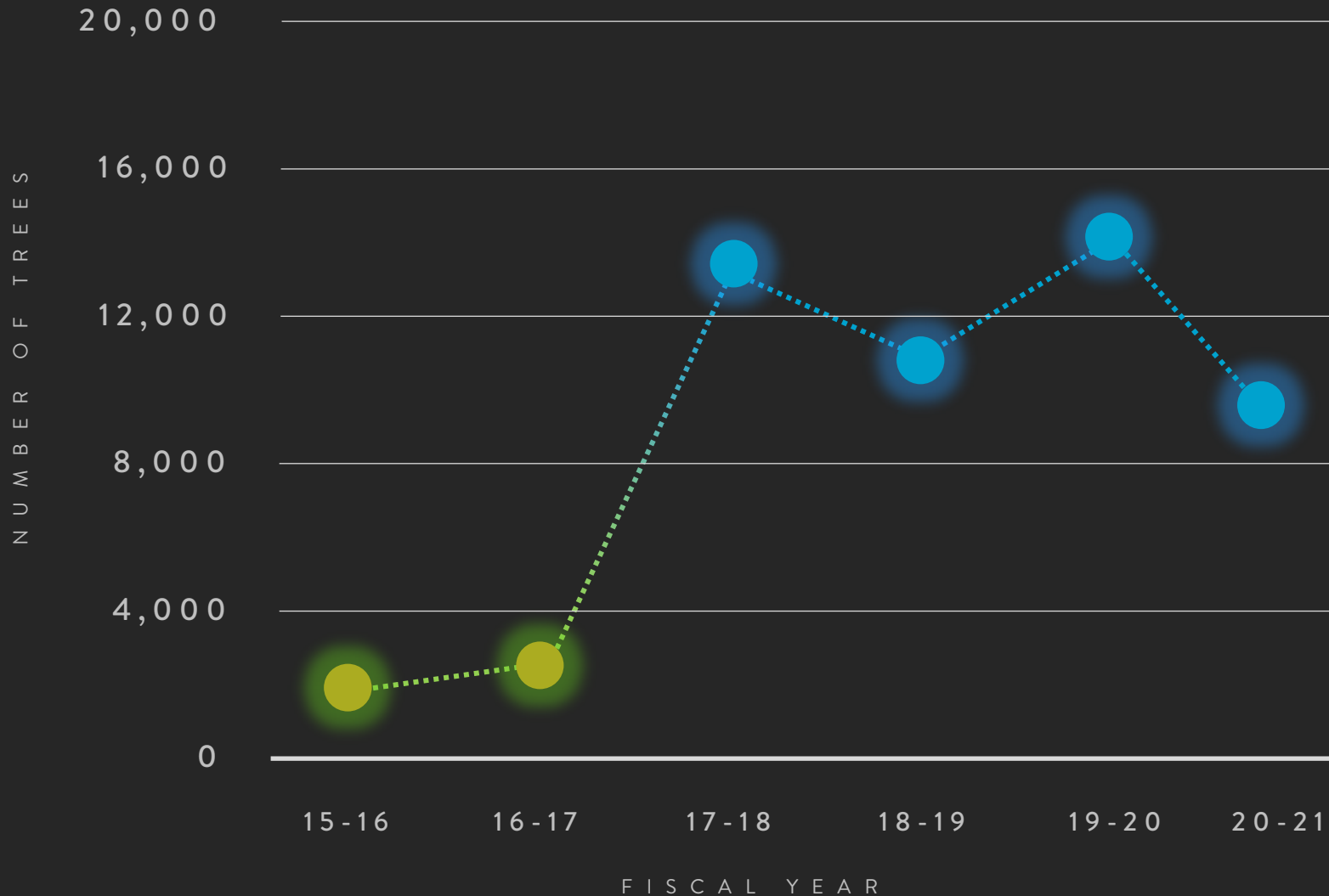
2,102

maintained FY15-16

2,372

maintained FY16-17

TREES MAINTAINED ANNUALLY



2,102

maintained FY15-16

2,372

maintained FY16-17

13,159

maintained FY17-18

11,615

maintained FY18-19

14,302

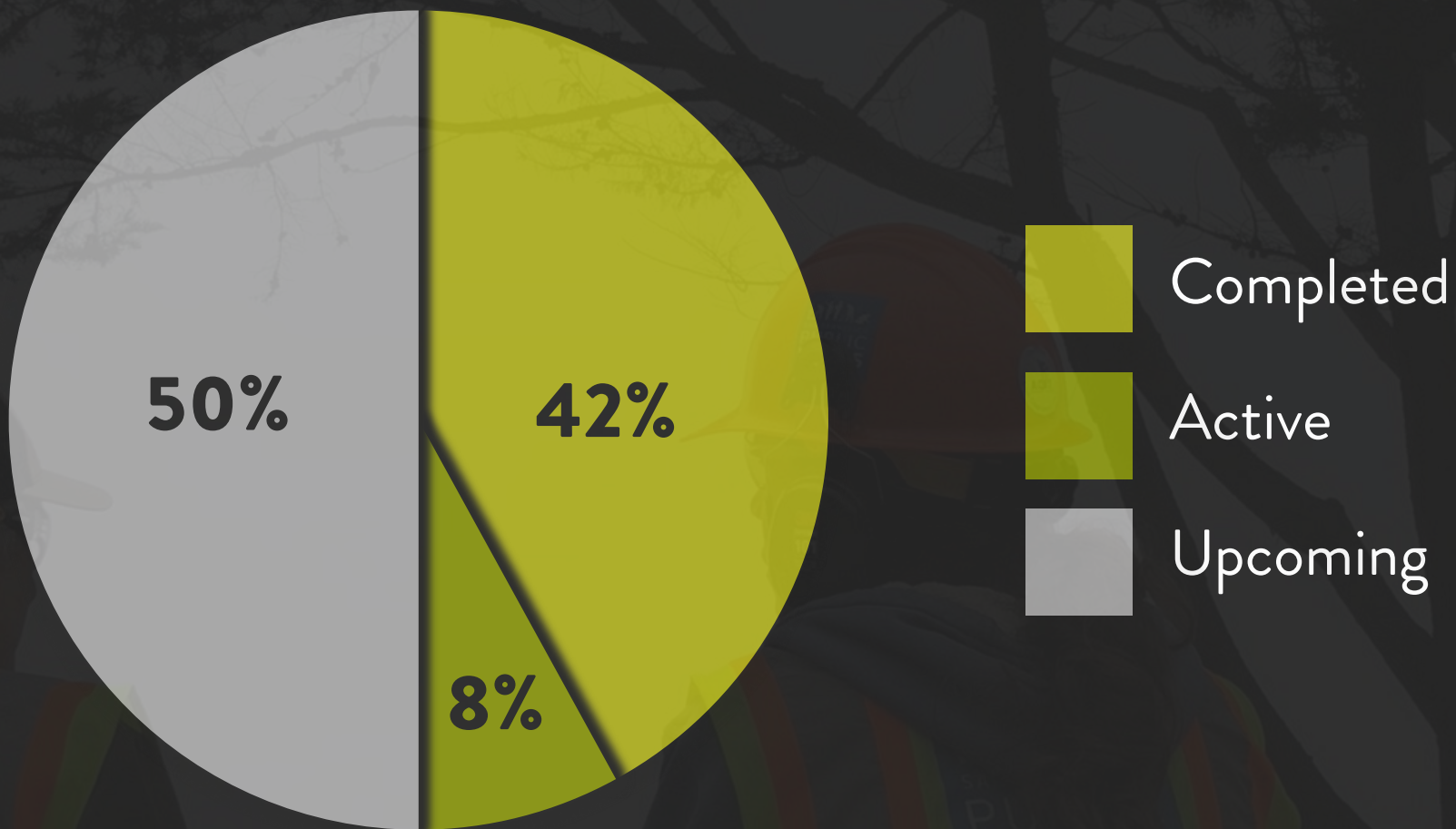
maintained FY19-20

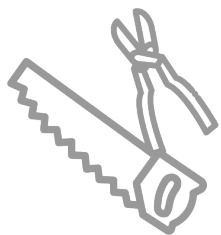
9,265

maintained FY20-21

StreetTreeSF

MAINTENANCE COMPLETED AS OF JUNE 30, 2021





Maintained
54,409

Street trees to date



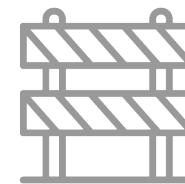
Removed
6,852

Structurally unsound, hazardous
and dead street trees



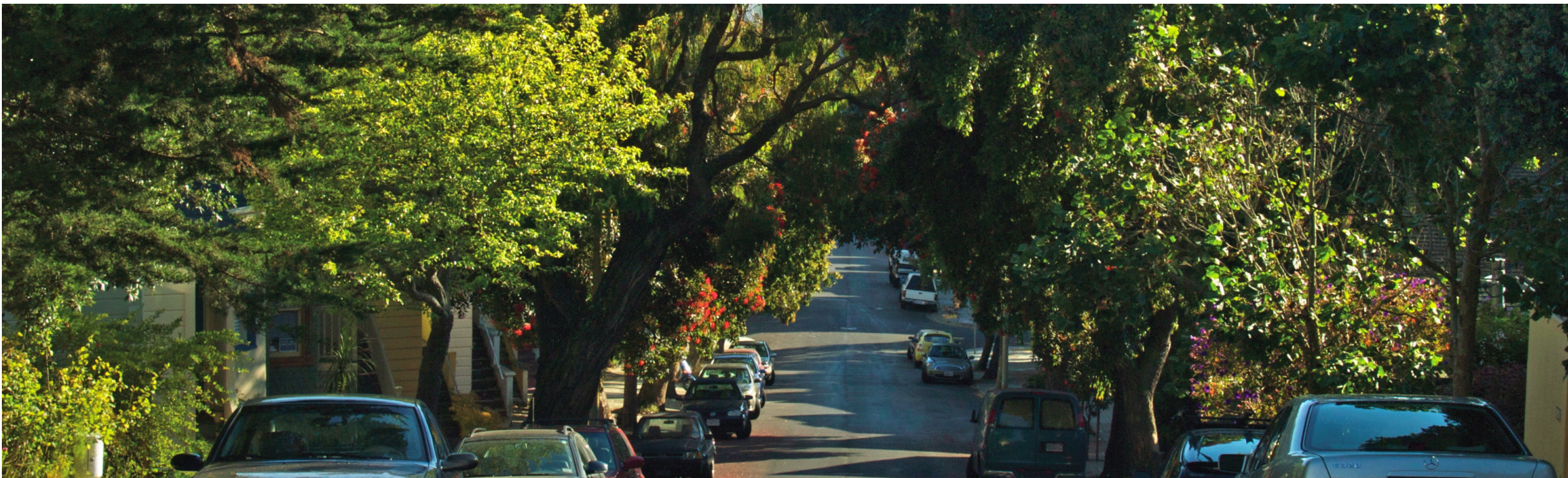
Repaired & Replaced
535,000

Square feet of sidewalks
damaged by trees



Made Safe
40,000

Sites that posed tripping hazards
due to tree-related damage





TREE WATERING



TREE WATERING



A photograph of San Francisco Public Works Operations workers engaged in a tree planting project. The workers are wearing high-visibility yellow and orange safety vests with the "SAN FRANCISCO PUBLIC WORKS OPERATIONS" logo on the back, and hard hats. They are gathered around a wooden structure, possibly a planter or a support for a tree. The background shows a building and some greenery. The image has a warm, yellowish tint.

TREE PLANTING

UNINTENDED CONSEQUENCES OF SUCCESS



San Francisco Chronicle

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Sign In



LOCAL // BAY AREA & STATE

SF's budget for new trees surges, but city falls far short of planting goal



Dominic Fracassa

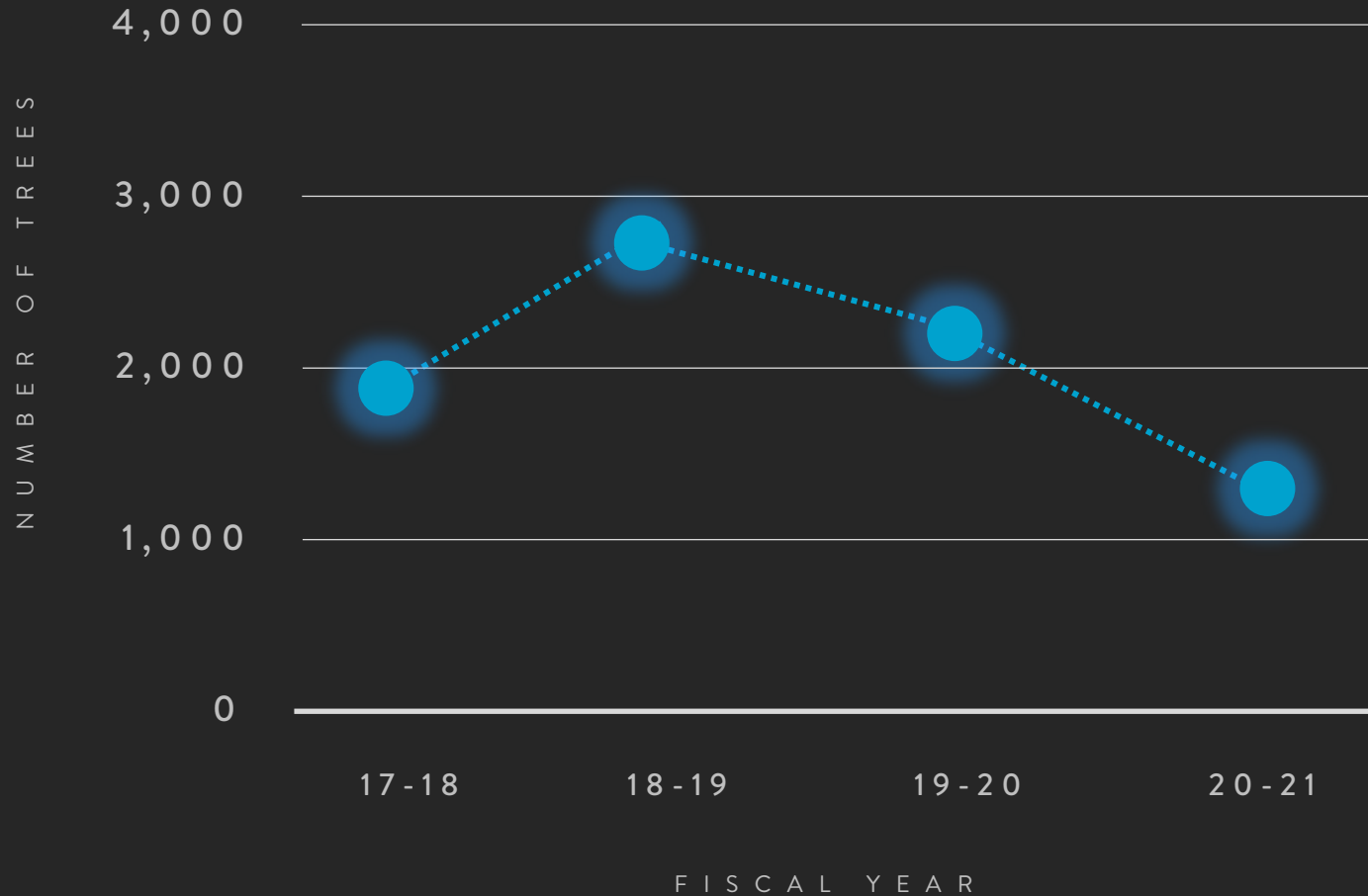
June 28, 2019

Updated: June 28, 2019 4 a.m.



- Removals have created need for thousands of replacement trees
- No funding for planting included in proposition / ballot measure

TREES REMOVED ANNUALLY



1,938

removed FY17-18

2,807

removed FY18-19

2,107

removed FY19-20

1,157

removed FY20-21



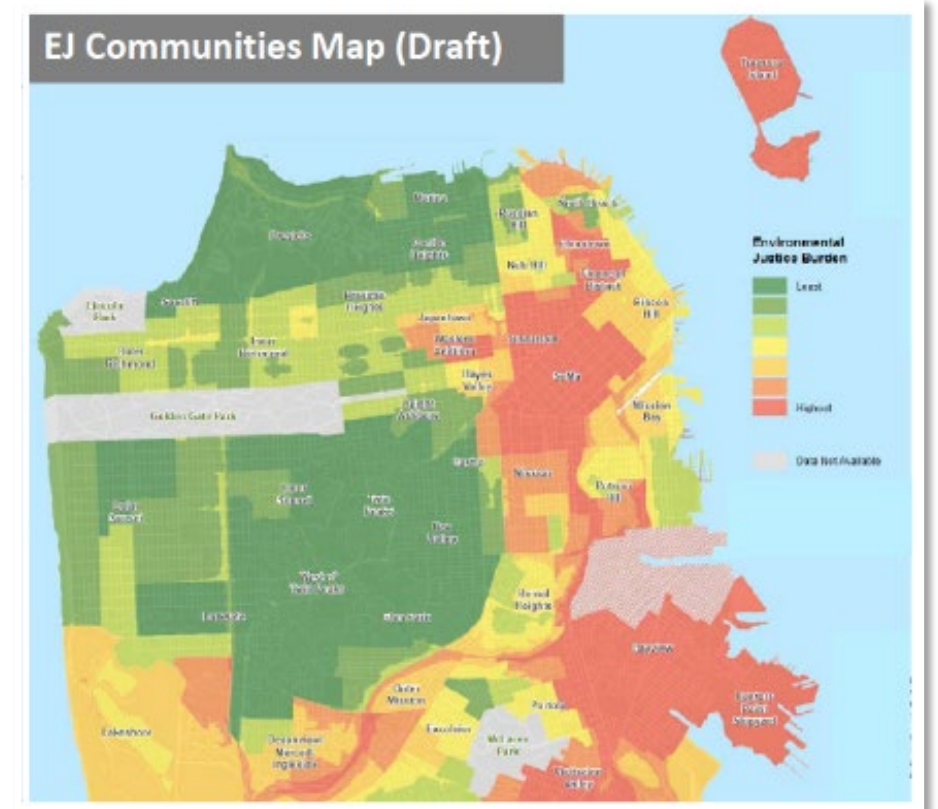
Preserve and Grow

Urban Tree Canopy



Advance

Racial & Social Equity



Promote

Climate Resilience & Adaptation

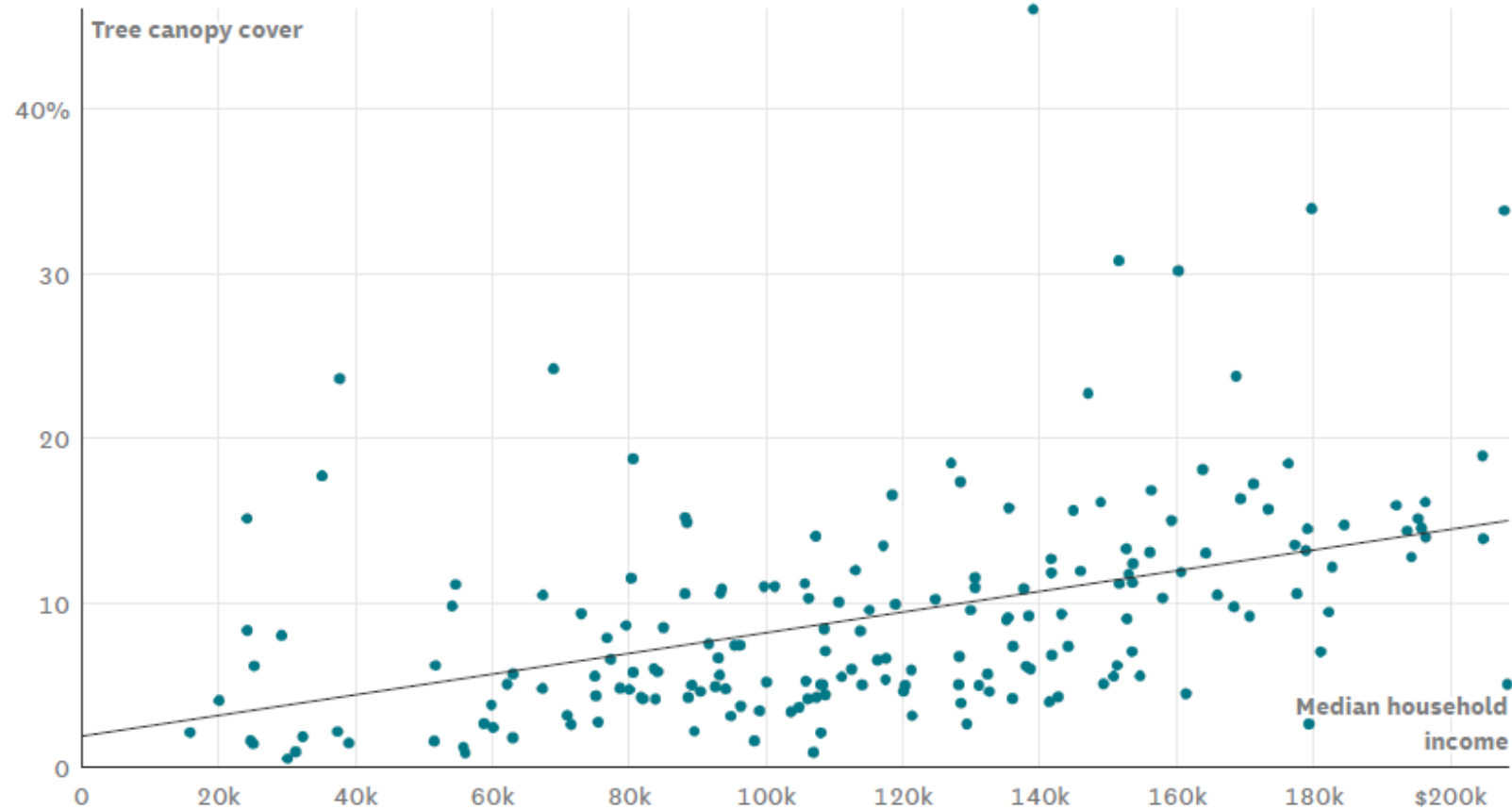


OUR FOCUS:

**ACHIEVE
STREET TREE
EQUITY IN ALL
SAN FRANCISCO
NEIGHBORHOODS.**

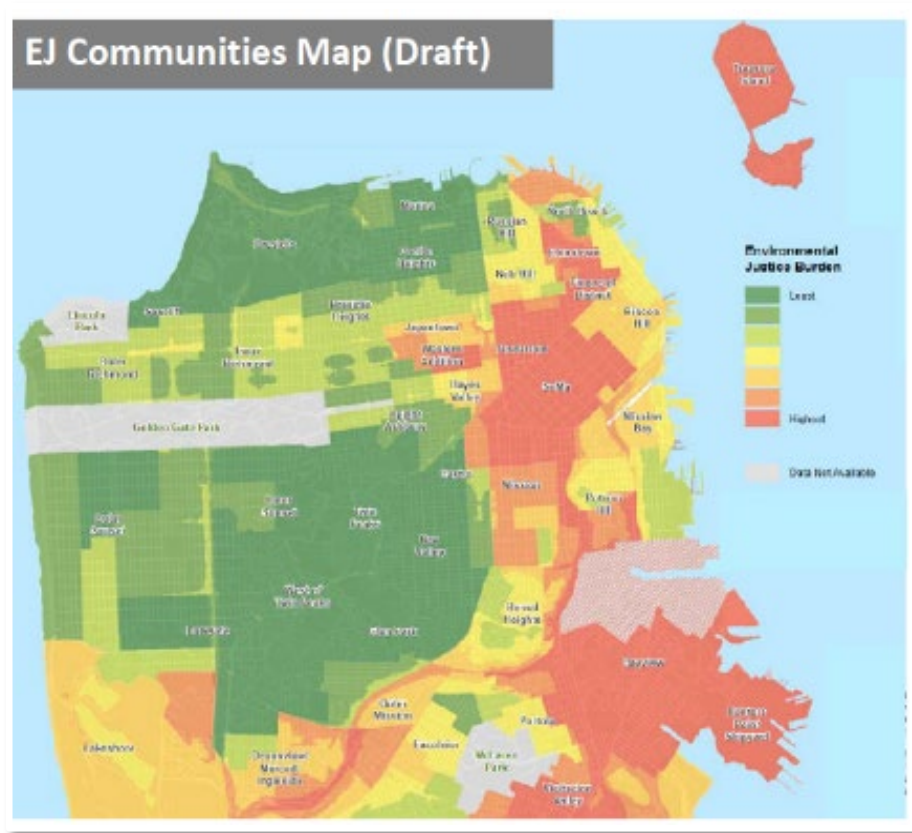
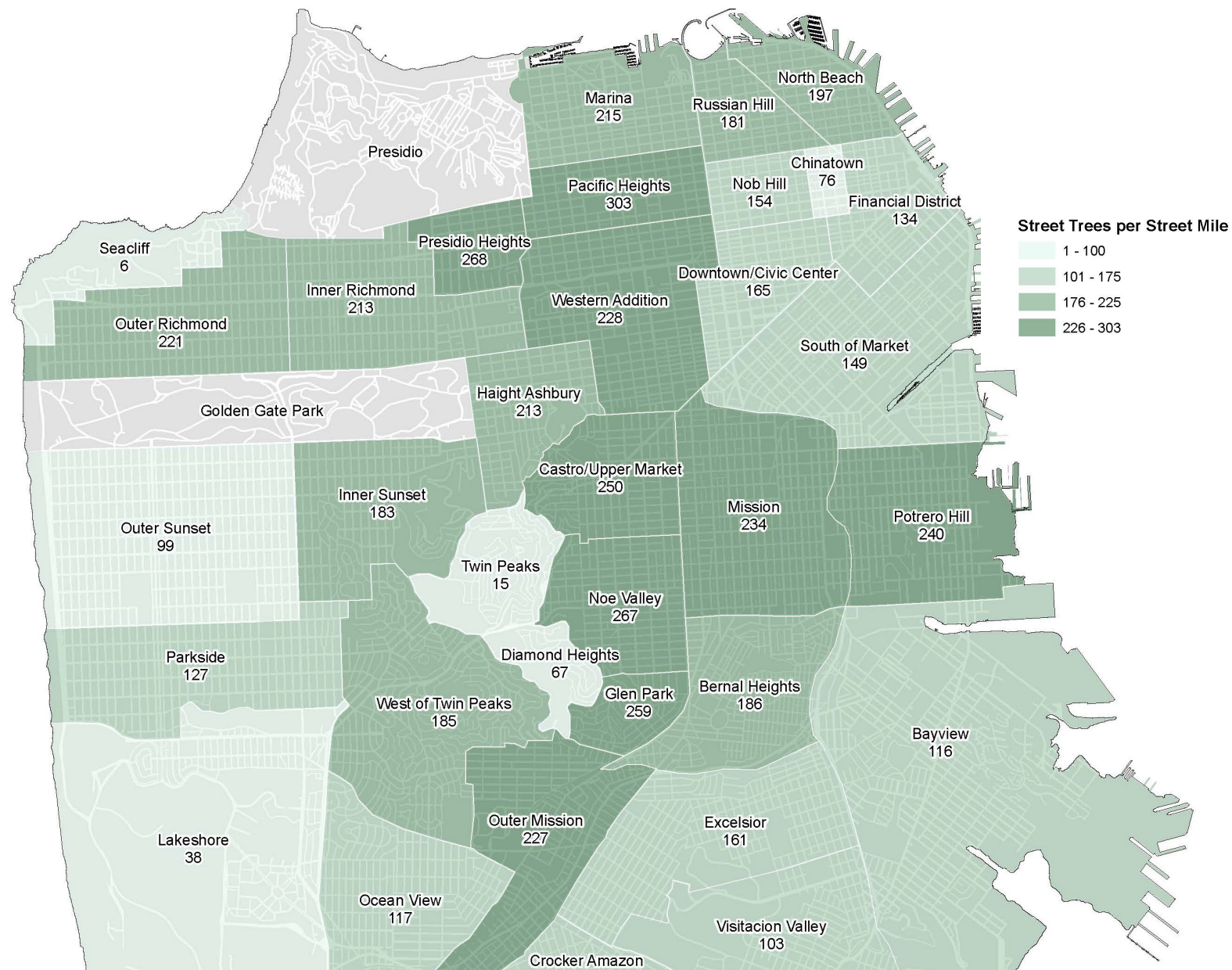
TREE CANOPY AND INCOME

Relationship between tree canopy and household income in S.F. census tracts

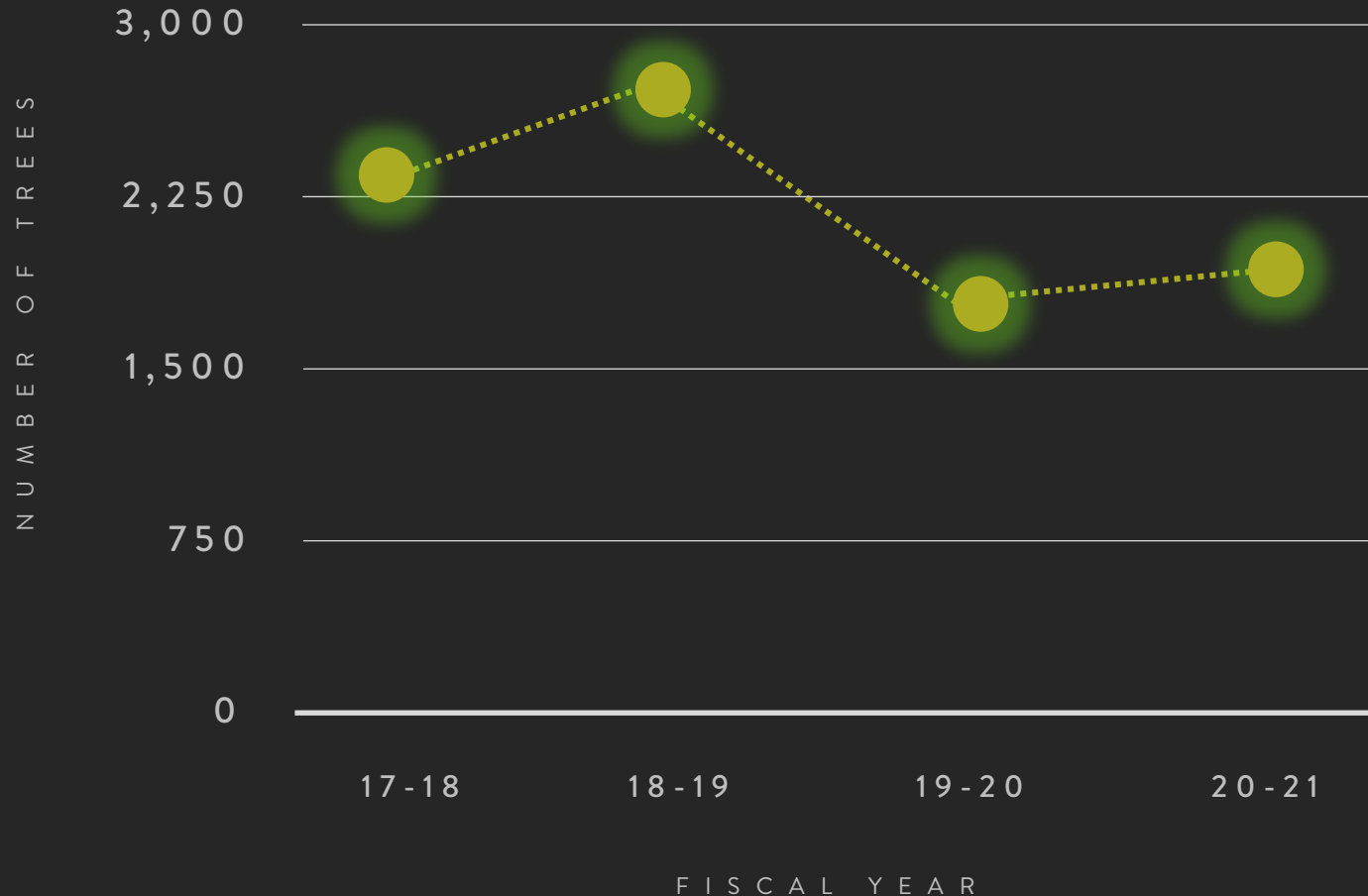


Source: San Francisco Chronicle (2021)

UNEQUAL DISTRIBUTION OF STREET TREES



TREES PLANTED ANNUALLY



BUF, FUF, planting permits (for development, etc)

2,291

planted FY17-18

2,665

planted FY18-19

1,777

planted FY19-20

1,858

planted FY20-21*

*does not include Climate Action Now! planting numbers

Note: 642 streetscape trees over this period

A photograph of San Francisco Public Works Operations workers at a construction site. Two workers in the foreground wear high-visibility yellow vests with orange reflective stripes and hard hats. The vest on the left has a logo that reads "SAN FRANCISCO PUBLIC WORKS OPERATIONS". The vest on the right has a similar logo. They are standing behind a wooden construction barrier. In the background, other workers and trees are visible. The image has a yellow-green tint.

NEW OPPORTUNITIES: 24TH STREET

(MISSION DISTRICT)



LOWER 24TH STREET FICUS







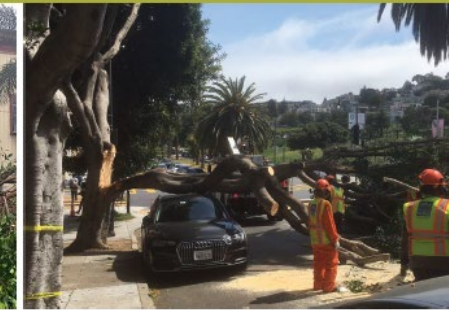
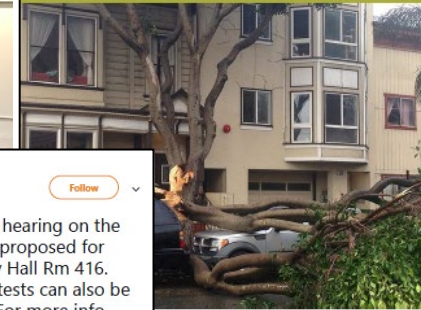






Zuckerberg San Francisco General
Reunión Comunitaria Trimestral:

Eliminación de árboles en Lower 24th Street



Join us for a walk-through of Lower 24th Street's Proposed Tree Removal

San Francisco Bureau of
Urban Forestry invites
you on a walk-through
with the City's Urban
Forester to review
each ficus tree planned

April 22, 2019

6:00 PM - Walk-through

Meet in front of Silverstone Cafe
3278 24th Street

SF Public Works
@sfpublishworks

Join us for a public hearing on the
lower 24th Street ficus trees proposed for
removal: 6/5 - 5:30 PM - City Hall Rm 416.
Can't make it in person? Protests can also be
submitted by mail or email. For more info,
visit
sfpublishworks.org/project/tree-r ...



"At this point the damage does not appear significant," said Maria Bermudez, the operations
director of Mission Girls, who said the school should re-open on Monday. "There wasn't much
damage to the roof, just the tiles."
Those nearby when the tree split said they heard a loud crash and boom when the first branch fell.
"I was taking an order from a customer, and I heard something like a bomb," said Lamea Abdulous.

Street está bordeada de árboles
án envejeciendo, en mal estado
n riesgo de que caigan sus ramas.
reocupación importante de
ra las personas y las propiedades

Marzo 20, 2019 - 6:30 PM
1001 Potrero Avenue



Lower 24th Street Ficus Trees

street
tree

PUBLIC
WORKS

Questions and Answers

Q 1. Why are you removing so many trees?

A 1. Each and every tree was evaluated on its own. There are many trees
proposed for removal because Lower 24th Street is such a highly used corridor
which creates a higher public safety concern.

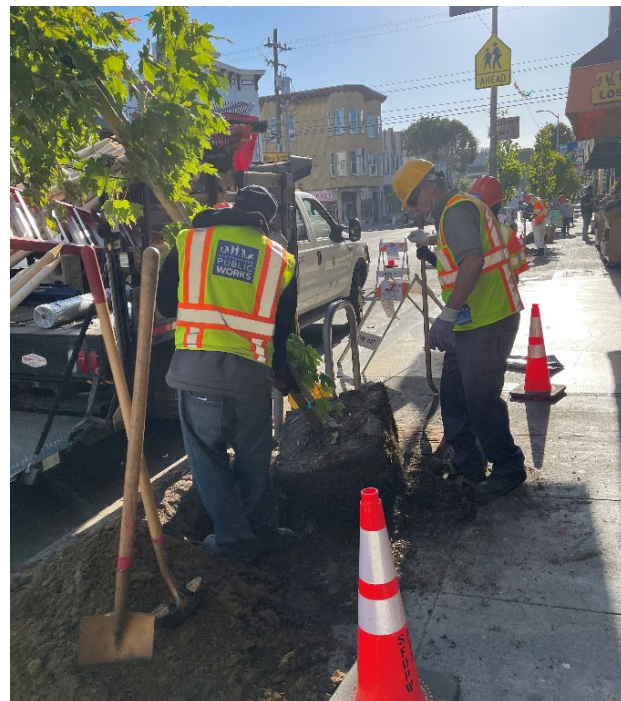
Updated information: The number of trees proposed for removal has changed
(decreased) since initial assessments of the corridor. Please see the next

4/24/2019

Lower 24th Street ficus trees

1

Address	Street	Species	Recommendation	Replacement possible yes/no, reasons	Sidewalk repair required, yes/no	Pave over, yes/no	Reduce basin size to 4x4	Replacement Species (maple or ginkgo)	Notes
Potrero-Hampshire									
2700	24th St.	Ficus	Remove	Yes replace - end of bus zone	Yes	-	-	Ginkgo biloba	
2700	24th St.	Ficus	Remove	No replacement, bus zone & street light	No	Yes	-	-	
2700	24th St.	Ficus	Empty basin	-	Yes	-	Yes	Acer rubrum	
2700	24th St.	Ficus	Remove	Yes	No	-	Yes	Acer rubrum	Tree is in severe decline
2718-2722	24th St.	Ficus	Experimental Pruning	-	No	-	No	-	
2726-2734	24th St.	Ficus	Experimental Pruning	-	No	-	Yes	-	
2726-2734	24th St.	Ficus	Experimental Pruning	-	Yes	-	Yes	-	



A COALITION OF COMMUNITY VOLUNTEERS COMMITTED TO A GREENER, CLEANER, HEALTHIER FUTURE

MISSION VERDE

A Calle24 Quality of Life Initiative



FREE STREET TREES
FOR THE MISSION
為MISSION社区免费植樹
ÁRBOLES GRATIS
PARA LA MISSION



Friends of the Urban Forest, in collaboration with Calle 24 and Mission Verde, will be planting trees in the Mission between April and July. You can be part of the process! Choose your tree and work with your community to plant trees in the heart of the Mission. Sign up for a free tree today!

城市森林的朋友们，我们将与Calle24与Mission Verde合作，一起进行四月至七月的植树活动。您可以成为我们的一份子！选择您喜爱的树，与您的社区在任务中心一起种树吧。注册即可今天获得免费的树一棵！

Friends of the Urban Forest, en colaboración con Calle 24 y Mission Verde, va a estar plantando árboles en la Mission entre abril y julio. ¡Usted puede ser parte del proceso! Usted podrá escoger su árbol, y trabajar con su comunidad para plantar árboles en el corazón de la misión. ¡Regístrese para recibir un árbol gratis ahora!

www.fuf.net/mission

Planting date / 植树日期 / Fecha de siembra: April-July / 4月-7月 / abril-julio

For more information / 有更多信息 / Para más información: info@fuf.net || 415.268.0772

MISSION
VERDE

FRIENDS OF THE
URBAN FOREST

Calle 24

Latino Cultural Center

street sf
tree



STREET TREE NURSERY



STREET TREE NURSERY

STREET TREE NURSERY
NOW OPEN!



SPRITS



A green-tinted photograph of a construction site. In the foreground, several shovels are stuck into a pile of dirt. In the background, three workers wearing hard hats and safety vests are standing on a grassy slope. The text "FUNDING FOR PLANTING" is overlaid in the center.

FUNDING FOR PLANTING

FUNDING FOR TREE PLANTING

POLITICS + GOVERNMENT

U.S. Senate agrees to move ahead on \$550B in new infrastructure spending

BY: LAURA OLSON - JULY 28, 2021 4:30 PM



- Mayor's Capital Budget

\$2.5M

Bayview Planting Project
and Nursery "seed" funding

- Prop K Funding

- CAL FIRE Grants

- Trees 4 Community Recovery
City & County of San Francisco advocacy for
Infrastructure stimulus funds

FUNDING OVERVIEW

Public Works Tree Planting and Establishment Appropriated Annual Budgets by Funding Source					
Fund	FY 2017-18	FY 2018-19	FY 2019-20	FY 2020-21	FY 2021-22 ¹
General Fund	750,000	1,325,000	772,500	572,500	3,000,000
Addbacks	-	47,000	1,280,000 ²	30,000	TBD
Market Octavia Impact Fees	100,000	100,000	100,000	100,000	100,000
Prop K Local Grant	1,141,166	1,192,519	1,408,424	1,438,936	1,493,064
Total Budget	1,991,166	2,664,519	3,560,924	2,141,436	4,593,064
1. Mayor's Phase Budget and Prop K programming, not final 2. Due to COVID-19 rebalancing, \$500,000 was subtracted midyear					

PW – Street Tree Planting and Establishment

The Urban Forest Master Plan, Phase I: Street Trees, adopted unanimously by the Board of Supervisors, recommends growing the street tree population by planting 2,500 trees annually, in addition to trees that need to be replaced. This requires Public Works to plant approximately 6,000 trees a year.

The estimated cost for street tree planting and establishment is \$172 million over the next 10 years. While \$16.7 million has been identified through Prop K and other local sources, an unfunded need of \$155 million remains.







[SFPUBLICWORKS.ORG/TREES](https://sfpublicworks.org/trees)

[#LoveOurCity](#) | [@sfpublicworks](#) | [#StreetTreeSF](#)

Performance Audit of Street Resurfacing and Street Tree Maintenance

October 14, 2021

San Francisco Board of Supervisors

Budget & Legislative Analyst's Office



Background

- ❑ BOS Motion M19-108
- ❑ Audit was completed in June 2021
- ❑ 9 Finding Areas covering various aspects of DPW's street resurfacing and StreetTreeSF programs



Street Resurfacing Findings

- ❑ Pavement Condition Across the City
- ❑ Pothole and Patch Paving Service Distribution and Performance Goals
- ❑ Street Resurfacing Change Order Review Process
- ❑ Funding Sustainability for Street Resurfacing



StreetTreeSF Findings

- ❑ StreetTreeSF Baseline Pruning Progress
- ❑ StreetTreeSF Staff Vacancies
- ❑ Geographic Distribution of StreetTreeSF Services
- ❑ Street Tree Canopy Growth and Geographic Distribution
- ❑ StreetTreeSF Data Asset Management Limitations



Baseline Pruning Progress

- StreetTreeSF is not on track to meet its initial program goal
- StreetTreeSF has been unable to being its planned maintenance cycle of proactively maintaining all City street trees every three to five years.
- StreetTreeSF has not publicly established annual goals for tree pruning or sidewalk repair that are reported to the public or the Board of Supervisors
 - No definition of how it measures its success at completing the “worst first” priority keymaps



StreetTreeSF Staff Vacancies

- ❑ Key positions have been vacant for extended periods of time
- ❑ DPW has held onto the position authority, but reprogrammed the salary savings to contracts for tree pruning and removal work
- ❑ Arborist Apprenticeship program has not filled any of its eight positions.



Distribution of Street Tree Services

- ❑ Street trees are not evenly distributed across the City
- ❑ StreetTreeSF has so far focused on areas with high concentrations of trees to maximize tree activity efficiency



Street Tree Canopy Growth & Distribution

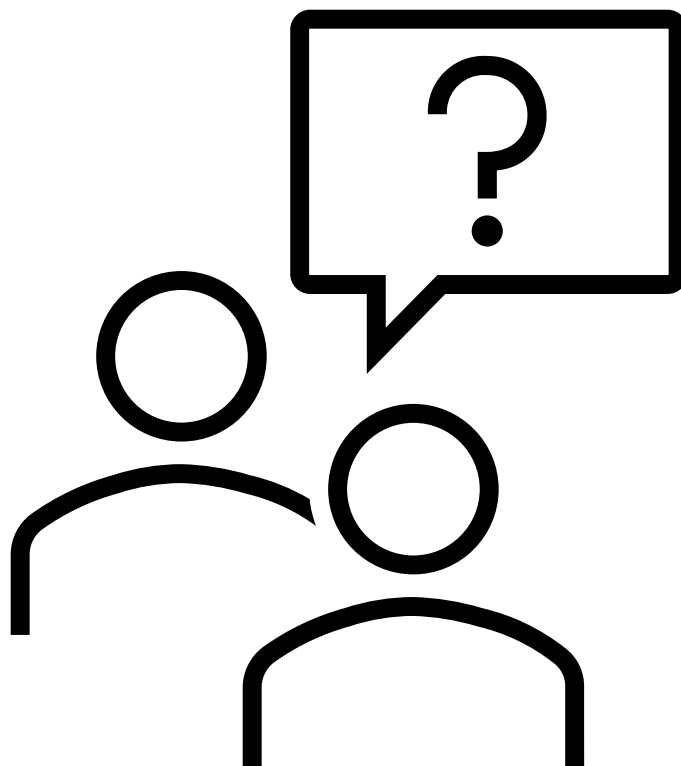
- ❑ San Francisco does not have a dedicated funding source for growing the street tree population
- ❑ The number of new street trees planted each year is not enough to maintain a baseline population of 125,000
- ❑ Street tree population is not evenly distributed
 - No long-term street tree management plan developed



StreetTreeSF Data Asset Management Limitations

- ❑ Data asset management systems were not designed for tree maintenance and urban canopy management
- ❑ Current systems produce unreliable reports for basic measures of tree and sidewalk work

Questions?



BOS Public Safety and Neighborhood
Services Committee

Tree Program Hearing

October 14, 2021

Lance Carnes

SaveSFtrees.org/water

District 3 --- 350 Broadway

This tree was not watered by
Public Works/BUF for 6
months.

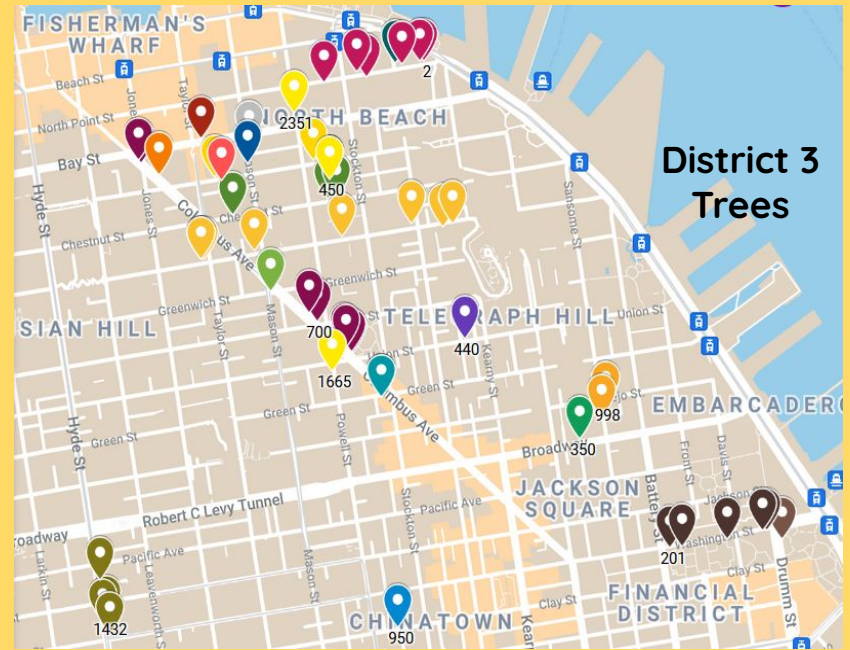
**BUF promises 20 gallons per
new tree per week for 3 years.**

SaveSFtrees.org/water



I performed a tree watering audit using the Public Works District 3 tree watering list:

72 trees total,
only 20 watered,
about 28%



Public Works does not do
tree watering audits.

SaveSFtrees.org/water

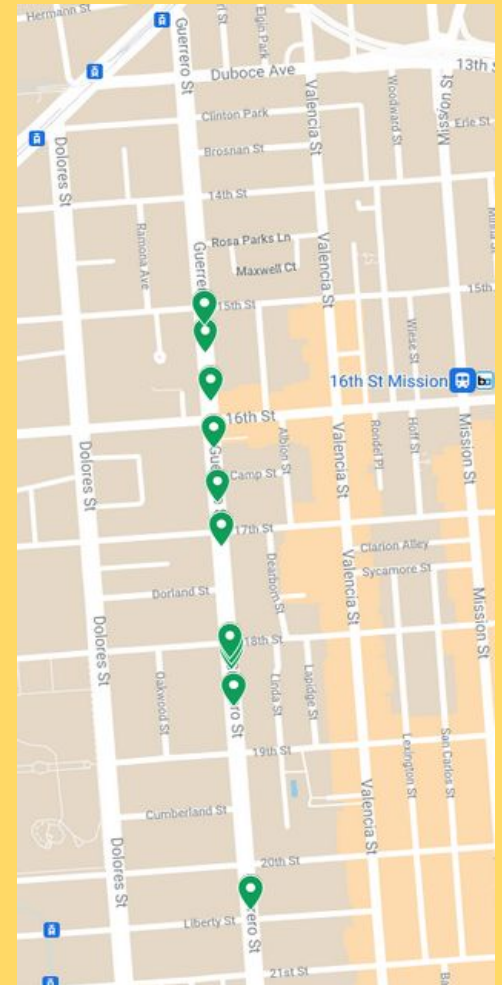
**District 8 --- Guerrero St
median**

79 trees and plantings

**Less than 5% were
watered**

Audited May thru August 2021

SaveSFtrees.org/water





Guerrero St Median

Left: Tree bag empty

**Right: Plantings not
watered**

**May -- August there
was virtually no Public
Works watering**

**Have seen
neighbors watering
with their own hoses
--- at risk to their
lives on this
high-speed stretch!**

SaveSFtrees.org/water



A Tree Watering Success story!

Mission Verde is a resident watering crew, regulated by Public Works. The 140-tree planting area is along 24th St between Potrero and Mission, including side streets.

By following Public Works' watering rules, **Mission Verde has a 100% watering success rate.**

MissionVerde.org



SaveSFTrees.org/water



SaveSFTrees.org/water

**Mission Verde
volunteers
with water
pushcart and
hose.**

If BUF can get
100% watering
from a resident
crew, why not
better results
from its own
crew?

Questions and a way forward

Why are taxpayers paying **\$1.3 Million** to water 2,200 new trees, but only 30% of them are actually being watered? **Where is the extra 70% or \$900K going?**

The 2014 San Francisco Urban Forest Plan promised 50,000 new trees by 2034, or **16,500 new trees by 2021**. The total net gain as of 2021 is **only 300 trees!**

San Francisco sorely needs a new Urban Forest Plan.

SaveSFtrees.org/water



SaveSFtrees.org/water

From: [Carroll, John \(BOS\)](#)
To: verb@sonic.net
Cc: [Peskin, Aaron \(BOS\)](#); [SF for all - Lance Carnes](#); [Judy Irving](#); [schuyler horn](#); [L Johns](#); [Board of Supervisors. \(BOS\)](#)
Subject: RE: BUF's responsibility for SF street trees - hearing 10/14/21 - File No. 211018
Date: Thursday, October 14, 2021 4:53:00 PM
Attachments: [image001.png](#)
[image002.png](#)

Thank you for your message.

I am adding it to the file for this matter, and by copy of this email to the board.of.supervisors@sfgov.org email address, it will be forwarded to the full membership of the Board of Supervisors for their consideration.

John Carroll

Assistant Clerk

Board of Supervisors
San Francisco City Hall, Room 244
San Francisco, CA 94102
(415) 554-4445

(VIRTUAL APPOINTMENTS) To schedule a virtual meeting with me (on Microsoft Teams), please ask and I can answer your questions in real time.

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From: CJ Verburg <verb@sonic.net>

Sent: Thursday, October 14, 2021 9:27 AM

To: Carroll, John (BOS) <john.carroll@sfgov.org>

Cc: Peskin, Aaron (BOS) <aaron.peskin@sfgov.org>; SF for all - Lance Carnes <info@sf4all.org>; Judy Irving <films@pelicanmedia.org>; schuyler horn <skyhorn@att.net>; L Johns <ljohns@metacosmos.org>

Subject: BUF's responsibility for SF street trees - hearing 10/14/21

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Like Lance Carnes, Judy Irving, & hundreds (probably thousands) of other SF residents, I'm very frustrated by the City's lack of care for our precious trees.

SF needs a new Urban Forestry Plan. The current Plan, adopted in 2014, promised 50,000 new trees by 2034, or **17,500 trees by 2021**. The **actual net new trees in 2021 is 300!**

Nor have my neighbors and I seen any enforcement of the corporate commitment to plant & maintain a new street tree for every Internet transmission box placed on public lampposts -- the one compensation promised to residents for the corporate/government alliance to override our concerns about the impact of these boxes on our health and quality of life.

The kind of auditing work Lance did to document some shortcomings of the Bureau of Urban Forestry should be carried out regularly, city-wide, by the BUF as part of its job description.

[LCarnes BOS hearing - unwatered new SF trees 10_14_21.pdf - Google Drive](#)

I'm grateful to the supervisors who called for today's hearing, & although I can't attend in person, I look forward to learning about -- and monitoring -- what action the BUF plans to take to remedy the City's abdication of its legal, moral, & common-sense responsibility in areas including growing our canopy and watering newly planted trees.

Thank you for your attention to this problem.

Carol Verburg
561 Greenwich St., #9

cjverburg.net



From: [Carroll, John \(BOS\)](#)
To: [Susannah Meek](#)
Cc: [Board of Supervisors, \(BOS\)](#)
Subject: RE: Item 2. 211018 [Hearing - SF Urban Canopy & Street Tree Maintenance Plan Updates] request to publish the status of SF urban forest management
Date: Thursday, October 14, 2021 4:53:00 PM
Attachments: [image001.png](#)

Thank you for your message.

I am adding it to the file for this matter, and by copy of this email to the board.of.supervisors@sfgov.org email address, it will be forwarded to the full membership of the Board of Supervisors for their consideration.

John Carroll

Assistant Clerk

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From: Susannah Meek <smeek@smarchitecture.com>

Sent: Thursday, October 14, 2021 7:12 AM

To: Carroll, John (BOS) <john.carroll@sfgov.org>

Subject: Item 2. 211018 [Hearing - SF Urban Canopy & Street Tree Maintenance Plan Updates] request to publish the status of SF urban forest management

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Government,

Our surroundings have a big impact on our well-being. Do you agree?
If places are neglected, people in those places can feel neglected. Doesn't that logically follow?

Please respect the studies showing multiple benefits of an urban tree canopy. Please don't look away from the empty tree wells and the struggling trees. Please value our city streets as an important public space, accessible to all citizens on a daily basis.

Please provide public information and current status on how the trees on public streets in San Francisco are being maintained.

LA seems to have considered specific methods in 2018, per their Management plan (excerpted below). SF does not have any documents that appear in a google search. The only item on the internet is an agenda from SF Environment, 7 pages, which makes it appear that SF needs technical help & expertise. (excerpted below).

thank-you,
Susannah Meek
415-543-5505

agenda from SF Environment 4. **Promote proper care and maintenance of trees.**

Conduct annual review of tree care by City agencies. Responsibility: Annually UFC SFE

- The UFC doesn't currently evaluate tree care provided by city agencies in the Annual Report. And we don't really have a way to effectively evaluate tree care. If members have suggestions about how we could effectively meet with request, it'd be great to talk about it. Otherwise, we may have to remove this one.

Excerpt from 2018 LA URBAN FOREST MANAGEMENT PLAN

Tree inventory information is critical to urban forest planning, but without the aid of a tree management software application, the data can be cumbersome and ineffective. There are two possible types of tree management applications appropriate for Los Angeles: stand-alone tree management applications that are web-based, ESRI GIS compatible, include robust mobile access, are customizable, and are reliable; or enterprise-based asset management software that incorporates user-interfaces for each of a city's assets, including its trees. Each of these options has advantages, with the stand-alone software more off-the-shelf ready and costing considerably less, and the enterprise system integrating all City data into one database that is accessible by all departments for planning purposes. Standalone tree management software may cost \$35,000 or more initially, with ongoing, annual licensing fees. Enterprise systems may cost \$250,000 or more, with ongoing, annual licensing fees. The Urban Forestry Division is in the process of exploring tree management software and should coordinate with RAP so that they use the same system, or at least ensure system

compatibility to facilitate future urban forestry planning and monitoring

From: [Carroll, John \(BOS\)](#)
To: [Shawna J. McGrew](#)
Cc: [Board of Supervisors \(BOS\)](#)
Subject: RE: TREES - File No. 211018
Date: Thursday, October 14, 2021 4:52:00 PM
Attachments: [image001.png](#)

Thank you for your message.

I am adding it to the file for this matter, and by copy of this email to the board.of.supervisors@sfgov.org email address, it will be forwarded to the full membership of the Board of Supervisors for their consideration.

John Carroll
Assistant Clerk

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From: Shawna J. McGrew <sunsetfog@aol.com>
Sent: Thursday, October 14, 2021 7:03 AM
To: Carroll, John (BOS) <john.carroll@sfgov.org>
Subject: TREES

This message is from outside the City email system. Do not open links or attachments from untrusted

sources.

"I think I shall never see a poem as lovely as a tree" you know the poem. I want to add what trees do for us.

- 1) fight climate change
- 2) home for birds, bees, insects, small animals
- 3) add value to your home
- 4) hide some really dirty streets

and much more

Please remember that the voters/tax payers voted overwhelming to have the City plant and care of are much needed TREES.

Thank You

Shawna McGrew

Sunsetfog@aol.com

From: [Ruth D Erznornik](#)
To: [ChanStaff \(BOS\)](#); [Stefani, Catherine \(BOS\)](#); [Peskin, Aaron \(BOS\)](#); [Mar, Gordon \(BOS\)](#); [Preston, Dean \(BOS\)](#); [Haney, Matt \(BOS\)](#); [MelgarStaff \(BOS\)](#); [MandelmanStaff, \[BOS\]](#); [Ronen, Hillary](#); [Walton, Shamann \(BOS\)](#); [Safai, Ahsha \(BOS\)](#); [Carroll, John \(BOS\)](#)
Subject: whist@pacbell.net
Date: Wednesday, October 13, 2021 9:15:11 AM

This message is from outside the City email system. Do not open links or attachments from untrusted sources.

Dear Supervisors,

Trees aren't just nice things for our neighborhoods to have; they are essential green infrastructure that will protect us from a hotter and drier climate in the future.

I'm writing to you in advance of Thursday's hearing at the Public Safety and Neighborhood Services Committee to ask for your commitment to grow and care for SF's urban forest. Since voters approved the Street Tree SF ballot measure in 2016, our city has fallen behind its goals for planting and caring for new trees. Please commit the resources necessary to plant more trees and water and care for the ones we've already planted.

Growing our urban forest is a matter of climate justice. Neighborhoods with fewer trees are more likely to be home to communities of color, lower income residents, seniors and people with disabilities. This historic lack of investment makes these neighborhoods more susceptible to extreme heat events and poor air quality.

It's time to do the right thing, and increase funding for tree planting, watering and care. If our city is going to survive and thrive 20 years from now, we need to take action today!

Thank you,

Ruth D Erznornik

From: [Phillip Parkerson](#)
To: [ChanStaff \(BOS\)](#); [Stefani, Catherine \(BOS\)](#); [Peskin, Aaron \(BOS\)](#); [Mar, Gordon \(BOS\)](#); [Preston, Dean \(BOS\)](#); [Haney, Matt \(BOS\)](#); [MelgarStaff \(BOS\)](#); [MandelmanStaff, \[BOS\]](#); [Ronen, Hillary](#); [Walton, Shamann \(BOS\)](#); [Safai, Ahsha \(BOS\)](#); [Carroll, John \(BOS\)](#)
Subject: SF must do better by our urban forest
Date: Wednesday, October 13, 2021 8:46:34 AM

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Dear Supervisors,

Trees aren't just nice things for our neighborhoods to have; they are essential green infrastructure that will protect us from a hotter and drier climate in the future.

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It's time to do the right thing, and increase funding for tree planting, watering and care. If our city is going to survive and thrive 20 years from now, we need to take action today!

Thank you,

Phillip Parkerson

BOARD of SUPERVISORS



City Hall
1 Dr. Carlton B. Goodlett Place, Room 244
San Francisco 94102-4689
Tel. No. (415) 554-5184
Fax No. (415) 554-5163
TDD/TTY No. (415) 554-5227

MEMORANDUM

TO: Carla Short, Interim Director, Public Works
Phil Ginsburg, General Manager, Recreation and Parks Department
Michael Carline, Interim Director, San Francisco Public Utilities Commission

FROM: John Carroll, Assistant Clerk, Public Safety and Neighborhood Safety
Committee, Board of Supervisors

DATE: September 29, 2021

SUBJECT: LEGISLATION INTRODUCED

The Board of Supervisors' Public Safety and Neighborhood Safety Committee has received the following hearing request, introduced by Supervisor Peskin on September 21, 2021:

File No. 211018

Hearing to receive updates on the implementation and funding of the City's urban canopy and street tree maintenance, watering, retention, replacement and expansion plans, including all trees on public property and in San Francisco parks, as well as street trees acquired after the voters passed Proposition E in 2016 (originally File No. 160381); and requesting Public Works, the Recreation & Park Department and the Public Utilities Commission to report.

If you have any comments or reports to be included with the file, please forward them to me at the Board of Supervisors, City Hall, Room 244, 1 Dr. Carlton B. Goodlett Place, San Francisco, CA 94102.

c: Offices of Chair Mar and Supervisor Peskin
David Steinberg, Public Works
Jeremy Spitz, Public Works
Sarah Madland, Recreation and Parks Department
Masood Ordikhani, San Francisco Public Utilities Commission
Donna Hood, San Francisco Public Utilities Commission
John Scarpulla, San Francisco Public Utilities Commission

Introduction Form

By a Member of the Board of Supervisors or Mayor

Time stamp
or meeting date

I hereby submit the following item for introduction (select only one):

- ☒ 1. For reference to Committee. (An Ordinance, Resolution, Motion or Charter Amendment).
- ☐ 2. Request for next printed agenda Without Reference to Committee.
- ☐ 3. Request for hearing on a subject matter at Committee.
- ☐ 4. Request for letter beginning : "Supervisor [] inquiries"
- ☐ 5. City Attorney Request.
- ☐ 6. Call File No. [] from Committee.
- ☐ 7. Budget Analyst request (attached written motion).
- ☐ 8. Substitute Legislation File No. []
- ☐ 9. Reactivate File No. []
- ☐ 10. Topic submitted for Mayoral Appearance before the BOS on []

Please check the appropriate boxes. The proposed legislation should be forwarded to the following:

- ☐ Small Business Commission ☐ Youth Commission ☐ Ethics Commission
- ☐ Planning Commission ☐ Building Inspection Commission

Note: For the Imperative Agenda (a resolution not on the printed agenda), use the Imperative Form.

Sponsor(s):

Supervisor Peskin; Mandelman, Safai

Subject:

[Hearing - San Francisco Urban Canopy and Street Tree Maintenance Plan Updates]

The text is listed:

Hearing to receive updates on the implementation and funding of the City's urban canopy and street tree maintenance, watering, retention, replacement and expansion plans, including all trees on public property and in San Francisco parks, as well as street trees acquired after the voters passed Proposition E in 2016 (originally File No. 160381); and requesting the Department of Public Works, Recreation & Parks Department and San Francisco Public Utilities Commission to present.

Signature of Sponsoring Supervisor: []

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