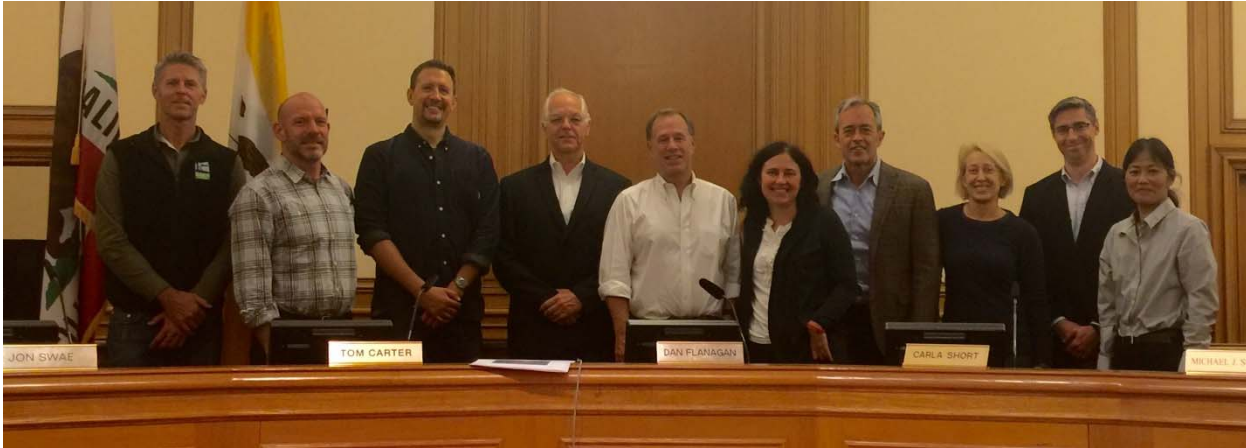


2015 ANNUAL URBAN FOREST REPORT

JULY 1, 2014-JUNE 30, 2015



The **Urban Forestry Council** advises city departments, including the Board of Supervisors and the mayor. Its tasks are to develop a comprehensive urban forest plan; educate the public; develop tree-care standards; identify funding needs, staffing needs, and opportunities for urban forest programs; secure adequate resources for urban forest programs; facilitate coordination of tree-management responsibilities among agencies; and report on the state of the urban forest.



Urban Forestry Council members from left to right:

Zack Taylor, Park Services Manager, San Francisco Recreation and Park Department
Andrew Sullivan, Landscape Architect
Jon Swae, Urban Forest Plan Manager, San Francisco Planning Department
Tom Carter, Deputy Director, Maintenance, Port of San Francisco
Dan Flanagan, Executive Director of Friends, the Urban Forest – CHAIR
Carla Short, Urban Forester, San Francisco Department of Public Works – VICE CHAIR
Michael Sullivan, Partner, Orrick Law Firm
Sandy Sherwin, Technology Fulfillment Manager, Ingersoll Rand
Igor Lacan, Urban Forestry Advisor, UC Cooperative Extension
Rose Hillson, Community Representative

Not pictured:

Malcolm Hillan, Environmental Horticulture Professor, City College of San Francisco
Dan Kida, Sr. Program Manager, Vegetation Management Quality Control, PG&E
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Cover photo provided by Friends of the Urban Forest

Submitted to Mayor Edwin M. Lee and the Board of Supervisors by the Department of the Environment, pursuant to San Francisco Environment Code Chapter 12 Sec. 1209.

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Please note: While this report seeks to be as comprehensive as possible, it is based on data provided by responding organizations and does not include complete information on all urban forestry work performed within the City and County of San Francisco. Additionally, some organizations did not provide complete survey responses. In these cases, throughout the report, there are spaces that are blank or where an organization may be entirely omitted from a table or narrative section.

Overview of San Francisco's Urban Forest, FY 2014-2015

SF Environment staff surveyed 19 City departments, public agencies, and non-government organizations that oversee or manage a portion of the urban forest in San Francisco. Organizations were asked to provide information on forestry budget and staffing, maintenance activities, accomplishments, and concerns in fiscal year 2014-2015. Of the 19 organizations surveyed, 16 provided full or partial responses.

This data is tracked to:

- Better understand the resources used to maintain the urban forest across the city.
- Track the priorities, needs, and concerns of city departments and local nonprofits, and monitor how they change over time.
- Better understand threats to the future well-being of our urban forest.
- Find ways to increase the contributions that trees provide to our community.

Primary Findings:

In fiscal year 2014-2015, all reporting organizations **planted 3,277 trees (slight increase from the 3,146 reported tree plantings last year), removed 1,810 trees (significant decrease from the 3,028 reported tree removals last year), and took care of 14,104 trees (decrease from the 16,373 reported trees pruned and otherwise cared for last year.)**

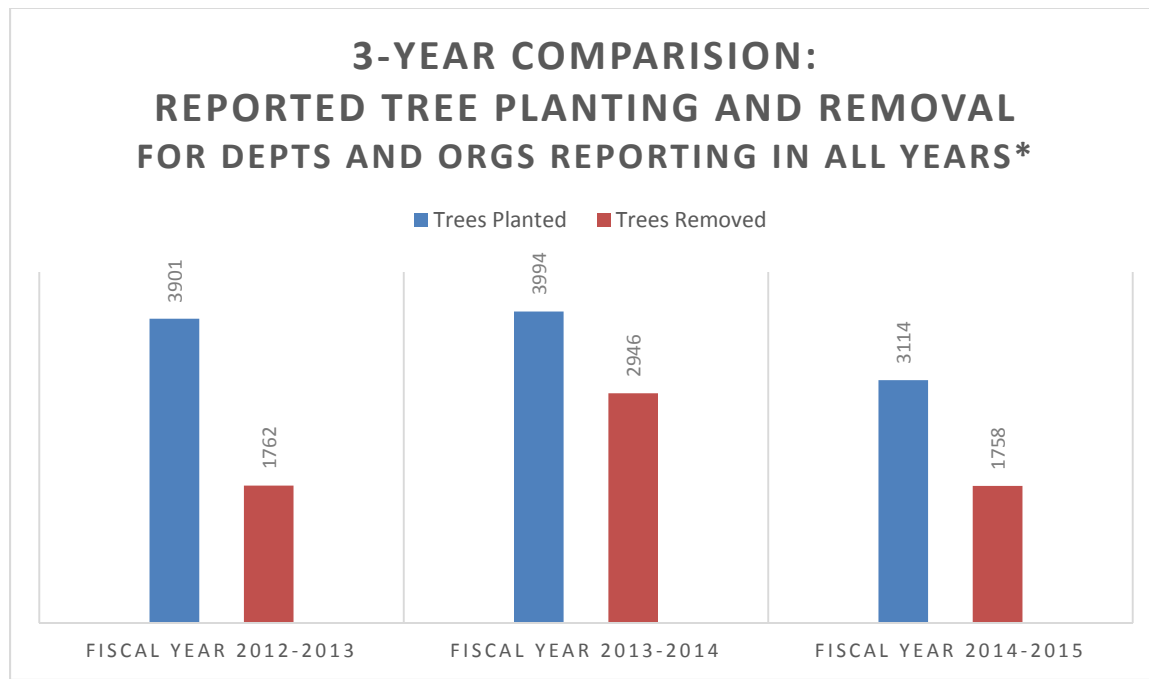
The two largest citywide forestry programs decreased funding and staffing levels. San Francisco agencies reported approximately 97 full-time staff equivalent (FTE) positions that dedicated a portion of their time to urban forest programs. Of these staff positions, approximately 72.6 FTEs are dedicated to planting and maintaining trees. These **staffing levels are a significant decrease** from reported staffing levels last year: 129 FTE positions that spend a portion of their time on urban forest programs and 98.5 FTE dedicated solely to urban forestry programs in fiscal year 2013-2014. **These staff reductions were primarily from Public Works (22 fewer forestry FTEs this year) and Recreation and Park (10 fewer forestry FTEs this year), who lost an alarming 41.25% of their FTEs this fiscal year, despite RPD's planned staffing increases reported in the 2014 Annual Urban Forest Report.**

As in all previous Annual Urban Forest Reports, departments and agencies continue to identify funding and staffing constraints as their greatest limitations. A key priority for the City must be securing resources to address these ongoing programmatic deficiencies.

The ongoing drought has very likely been exacerbated by global climate change.¹ Forest managers reported significant concern for tree health, caused by factors such as extreme drought stress, aging tree populations, and pests/diseases, which are anticipated effects of global climate change and which

¹ Diffenbasugh, Noah, et al. "Anthropogenic warming has increased drought risk in California" Proceedings of the National Academy of Sciences of the United State of America. Vol. 112, nor 13. (2015) Web. 4, August 2015.

are all currently affecting several tree species. Forest managers reported tree health concerns for ornamental plum trees, ornamental pear trees, and redwood trees due to the drought and rising temperatures, which may be caused by global climate change. These managers reported that increased heat coupled with ongoing drought conditions are affecting tree dormancy periods and are resulting in increasing pest and disease pressure. Pests and diseases continue to plague several tree species, including myoporium (thrips), Monterey Pine (pitch canker), and Canary Island Date palm trees (*Fusarium*). **Forest managers expressed interest in planting tree species that will be better able to cope with the changing climate over the long term.**



*Please note that reported data is incomplete. This chart shows reported tree planting and removal data over the last three fiscal years, for only departments and organizations that provided data in each of these years, including: City College of San Francisco, San Francisco General Hospital, Friends of the Urban Forest, San Francisco Public Works, Pacific Gas & Electric, San Francisco Port Authority, Presidio Trust, San Francisco Public Utilities Commission, San Francisco Recreation and Park Department, San Francisco International Airport, San Francisco Unified School District, Treasure Island Development Authority, and the University of California San Francisco.

While the chart shows more trees planted than removed, it only provides reported data for those departments that responded to the Annual Urban Forestry Report Survey in each of these three years, and serves more to highlight data and monitoring gaps than urban forestry management success. This chart does not reflect an expected 4% mortality rate for the overall urban forest, but does indicate that additional trees have likely died or were removed without permits or formal recording. Baseline forestry resources for each of the responding departments has not been established and it is therefore not possible to estimate how well overall reported data compares to

expected mortality rates. However, some of the reporting departments do have data on their total forestry resource and can serve as an example to outline the concern that mortality rates far exceed reported data.

With 105K estimated street trees in San Francisco, a mortality rate of approximately 4% would typically be expected, equaling 4,200 street trees lost per year. In fiscal year 2014-2015 a reported 1,172 street trees were removed, which would indicate a mortality rate of only 1.12%. However, young trees are more susceptible to vandalism, destruction by vehicular accidents, and failure to establish, resulting in higher mortality rates overall, and their removals are not captured above, which can account for some of this gap. Regardless, only 2,406 street trees were planted which is far short of the 4,200 trees that would need to be planted to offset tree loss and prevent shrinking of the urban forest and the benefits these trees provide. **This emphasizes the need to increase forestry management resources, both to better protect and manage our existing urban forest resource, and to ensure that tree planting adequately offsets tree loss. The Urban Forest Plan, Phase 1: Street Trees outlines opportunities to address street tree management shortfalls that, once implemented, will protect San Francisco's urban forest assets and the multiple economic, environmental, and social benefits that these trees provide.**

List of Participating Organizations

The following organizations and city departments responded to the survey:

- City College of San Francisco (CCSF)
- Laguna Honda Hospital (LHH)
- San Francisco General Hospital (SFGH)
- Department of Public Works (Public Works)
- Friends of the Urban Forest (FUF)
- Municipal Transportation Agency (MTA)
- Pacific Gas and Electric (PG&E)
- Port of San Francisco (PORT)
- Presidio Trust (Trust)
- Recreation and Park Department (RPD)
- San Francisco International Airport (SFO)
- San Francisco Planning Department (Planning)
- San Francisco Public Utilities Commission (PUC)
- San Francisco Unified School District (SFUSD)
- San Francisco State University (SFSU)
- Treasure Island Development Authority (TIDA)
- University of California, San Francisco (UCSF)

The following organizations and departments did not respond to the survey request:

- California Department of Transportation, District 4 (CalTrans)
- Golden Gate National Recreation Area, Fort Mason (GGNRA)

Major opportunities and challenges reported by participating organizations

Management of San Francisco's urban forest is divided among many stakeholders who provide direct care to trees within their jurisdiction, as well as nonprofit organizations who engage with agency partners to support forestry activities on city-owned land.

The **California Department of Transportation, District 4** (CalTrans) manages trees and green spaces on state rights-of-way in the Bay Area and works with the Adopt-A-Highway division to allow neighborhood groups access to land for community gardening. Department staff reported that they were unable to provide input into this year's report, due to the significant amount of staff time that they have had to direct to address the effects of the drought.

City College of San Francisco (CCSF) manages several campus locations throughout the city and provided information on their tree management activities for the Ocean Campus. CCSF reported concerns with the health of Monterey Pine and eucalyptus, general low tree canopy cover, implementation of The Urban Forest Plan- Phase 1: Street Trees and completion of Phase 2 and Phase 3 of the Plan, competing land use priorities that may negatively impact tree canopy coverage, and funding for trees and landscaped areas.

Laguna Honda Hospital (LHH), a San Francisco Department of Public Health facility, is a 62 acre campus with approximately 3,000 trees, 80% of which are in open spaces. In 2014-2015, the hospital completed a 1.5 acre retrofit of an existing lawn, replacing the lawn with native and drought tolerant species. Laguna Honda Hospital's primary urban forestry concerns are tree safety, invasive species management, trail restoration and improvements, and ensuring public right of way access by preventing overgrowth into sidewalk and roadways.

San Francisco General Hospital (SFGH), a San Francisco Department of Public Health facility that is being redeveloped, significantly increased tree planting activities this year as part of the new hospital improvements. Gardening staff reported significant staffing constraints, identifying a need to restore gardener staffing levels to 3 full time employees from the current 2FTE.

San Francisco Public Works (Public Works) provides oversight and care to trees within the City's public rights-of way, including planting and maintaining street trees, issuing street tree planting and removal permits to residents, and responding to emergency street tree issues. In the last year and a half, Urban Forestry Inspectors have eliminated the backlog of open service requests received from 311, from approximately 1600 open requests to no backlog. Public Works is very concerned about the drought and implemented water saving measures that far exceeded the required reduction in water usage called for by the PUC in each of the last two years. Public Works has initiated the return of their Urban Forestry division to a Bureau and are in the process of hiring the Superintendent for the Bureau of Urban Forestry. Due to ongoing, unresolved budgetary constraints, Public Works has continued to transfer the maintenance responsibility of formerly Public Works maintained street trees to adjacent property owners. The department remains concerned with public response to the tree maintenance transfer, lack of funding, and long term financing for tree care. The approval of The Urban Forest Plan- Phase 1: Street Trees within this past fiscal year is a great accomplishment for multiple agencies and organizations within San Francisco that, when fully implemented, will solve these concerns.

Friends of the Urban Forest (FUF) helps individuals and neighborhood groups plant and care for street trees and sidewalk gardens in San Francisco. FUF completed a three year strategic plan that identifies the importance of performing a 5-year tree care visit on all FUF planted trees. Each FUF planted tree receives four follow-up tree care visits after planting, at 2-months, 12 or 18-months, 24 or 36-months, and 5-years. FUF continues to refine their community-based Sidewalk Landscaping Program to maximize concrete removal in and around existing trees. This program improves street tree longevity while increasing environmental benefits, such as improving storm water management and groundwater recharge. Additionally, FUF has increased street tree basin size wherever possible to achieve the same tree health and environmental benefits of the sidewalk landscaping programs and to reduce likelihood of future infrastructure damage. FUF has improved their tree care program by 1) improving GIS mapping to increase staff efficiency and by 2) combining tree care workdays with planting work days to improve 'tree care awareness' for new tree owners. FUF believes that California's current drought may be an indication that climate change has begun to affect San Francisco. In response, FUF has focused on improving their planting list to further reduce their offerings of species that require large amounts of water, whose health will be severely challenged if the drought continues another year. They are encouraging residents to understand how to protect mature trees from the drought, through the "Save Water and Save your Tree" campaign. In the coming year FUF's primary focus will be to draw public attention to deficiencies in City's street tree management and to develop solutions. FUF will look to the newly released [Urban Forest Plan – Phase 1: Street Trees](#) as a guide.

The **Municipal Transportation Agency (MTA)** planted 13 new trees at two Muni facilities this year to beautify and help clean the air. MTA remains very concerned about tree and plant health in the ongoing drought conditions. MTA needs two additional gardeners to meet maintenance needs of new Muni Facilities with landscape areas. Additionally, their Landscape Shop reported unmet equipment needs, specifically a landscape dump truck to aid in maintaining trees and other plants, which has been on request since 2005.

Pacific Gas and Electric Company (PG&E) works with property owners to resolve conflicts between trees and power lines. As in past reports, they identified concerns with public safety and service reliability due to conflicts between power lines and trees, especially palm trees, which, due to their structure and growth habit, cannot be effectively pruned away from power lines. PG&E is additionally concerned with safely pruning trees near cars that are parked alongside the curb.

SF Planning Department (Planning) develops policies, studies and plans to support the long-term health of the city's urban forest. The Department also provides technical and financial assistance for urban forestry administration and management. This year, the Planning Department initiated the Street Tree Nursery Study. In the upcoming year, they will complete the city-wide street tree census. The Planning Department is primarily concerned with implementation of the [Urban Forest Plan – Phase 1: Street Trees](#), including securing ongoing, stable maintenance funding for street trees in San Francisco, and scoping for Phase 2 of the Urban Forest Plan in 2015-2016.

The **Port of San Francisco (PORT)** manages the care of trees along the San Francisco Bay waterfront. The Port continues to be highly concerned with the loss of palm trees, due to *Fusarium* wilt fungal infections. The Port is collaborating with Public Works to contract and schedule palm tree replacements.

The **Presidio Trust (Trust)** oversees approximately 70,000 trees in the Presidio of San Francisco, the 1,491 acre National Historic Landmark located within GGNRA lands. The Trust actively manages more than 10,000 trees. The Trust cited ongoing concerns with the health of aging trees and drought.

The **San Francisco Public Utilities Commission (PUC)** manages trees and green space around reservoirs. The PUC's primarily urban forestry concern is the rising costs associated with management of trees that are diseased and at the end of their life span. To help address this, the PUC's City Distribution Division increased their budget for work orders to RPD's tree crew, to better manage the aging and diseased trees on PUC properties, including an increase in the scope of work that RPD will perform for them, based on the results of the Lake Merced tree survey that was completed this year.

The **Recreation and Parks Department (RPD)** maintains over 3,400 acres of open space with an estimated 131,000 trees in San Francisco. RPD is primarily concerned about staffing and budget limitations, which affecting RPD's ability to ensure over-aged canopy trees remain safe. They are also concerned with tree loss due to age and diseases. Looking forward, RPD expects to fill 8 new arborist positions in fiscal year 2015-2016.

The **San Francisco International Airport (SFO)** manages natural areas, trees, and landscaped areas surrounding the San Francisco Airport. SFO is focused on improving pollution and pest management within difficult environmental conditions. SFO is very concerned with care and management of trees that are not drought tolerant, noting in particular tree health issues with redwoods, California alders, and Catalina Ironwoods. SFO has reduced irrigation schedules and devoted increased resources to mulching and other water conservation measures.

The **San Francisco Unified School District (SFUSD)** provides care and maintenance for approximately 3,000 trees on 430 acres of school district property. As in past years, SFUSD remains highly concerned with ongoing staffing and funding needs for forestry work. They are especially concerned with funding and labor shortfalls that affect their ability to adequately maintain older trees and replace dying and diseased trees. The school district's budget for tree management has been only nominally increased in the past several years, despite mounting tree maintenance requirements. Because of this, SFUSD has concerns with maintaining all of the large trees on their school campuses.

San Francisco State University (SFSU) contracted a landscape architecture firm to create a landscape and forest management master plan. They also began using ArborPro tree management software to schedule and record tree maintenance and are removing hazardous trees to increase pedestrian safety and reduce property damage. The university is concerned with the affects that drought and increased disease and pest pressures are having on the SFSU's mature redwoods and Monterey pines, along with community concern regarding removing large trees. Looking forward, the University is interested in long-term sustainability planning and in receiving reclaimed water.

The **Treasure Island Development Authority (TIDA)** oversees the care of all trees on Treasure Island and the majority of trees on Yerba Buena Island. TIDA seeks to maintain the health of their existing trees and identify solutions to mitigate tree disease on their property. TIDA has taken possession of the first portion of the property comprising former Naval Station Treasure Island from the Navy, effective May 29, 2015. They will begin coordinated implementation of the Treasure Island/Yerba Buena Island development plan within the coming 18 months, including implementation of the Yerba Buena Habitat Management Plan. TIDA is extremely concerned with the ongoing drought. They are also interested in exploring best uses for the tree crops grown on-island now (olive trees) and portions of the Urban Agriculture areas planned for the Development Project.

The **University of California, San Francisco (UCSF)** owns a largely undeveloped 61-acre open space area just south of the Parnassus Heights campus called the Mount Sutro Open Space Reserve. UCSF is committed to maintaining the Reserve as a safe and accessible resource that San Francisco residents

and visitors can enjoy. UCSF has ongoing concerns with an ageing urban forest on the Parnassus campus, extreme drought stress, disease and pests, mitigating fire hazards, community engagement and funding constraints.

Table 1: Respondents were asked about staffing and budget

Department	Urban forest-related staff positions	# Staff (or FTE equiv) performing forestry work	Total department budget	Urban forestry related budget	Est. % of UF budget spent on tree planting, care, and removal	
					Amount	%
CCSF	2	0	\$900M	\$10K	\$10K	100%
SFGH	2	No Answer	No Answer	No Answer	No Answer	No Answer
LHH	2	0.1	\$9.51M	\$211.77K	\$211.77K	100%
Public Works	25	21	\$237.09M	\$4.96M	\$2.38M	48%
FUF	12.5	6	\$1.84M	\$1.54M	\$1.54M	100%
MTA	3	1	No Answer	\$200K	\$20K	10%
PG&E	1	3*	No Answer	No Answer	No Answer	No Answer
Planning	0.5	0.5	No Answer	\$200K	No Answer	No Answer
PORT	2	0	\$93.82M	\$283.51K	\$179K	No Answer
Presidio	10	10	No Answer	No Answer	No Answer	No Answer
SFPUC-CDD	0	0	No Answer	\$264K+**	\$264K	100%
RPD	23	23	\$163M	\$1.88M	\$1.88M	100%
SFO	2	0	No Answer	\$125K	\$25K	20%
SFUSD	0	0	\$1M	\$60K	\$60K	100%
SFSU	6	2	\$1.80M	\$200K	\$200K	100%
TIDA	2	0	\$13.68M	\$934.21K	\$280.26K	30%
UCSF	6	6	\$8M	\$200K	\$200K	100%
TOTAL:	97	72.6	\$529.75M	\$11.06M	\$7.24M	

*PG&E has one on-staff forester who oversees contractors.

**In addition to the \$264K work order for urban forestry project, SFPUC work ordered funds to the Natural Areas Program that included some urban forestry work.

Table 2: Respondents were asked about work plans

Dept.	How many trees within the department's purview were:			Work the department performed for others:	Work other organizations performed for the department/org:
	Planted	Cared for	Removed		
CCSF	0	500	15	Private contractors removed 8 trees	None reported
SFGH	76	51	22	None reported	None reported
LHH	24	100	5	None reported	RPD removed 4 trees; Private contractor removed 1 tree
Public Works	1243	4,358	1172	For SFMTA, 1 tree cared for and 1 tree removed; For SF Police Dept, 2 trees cared for and 1 tree removed; For SF Public Library, 1 tree cared for; For SFPUC, cared for and removed unknown quantity	None reported
FUF	1163	3,777		For SFE, 228 trees planted and 409 cared for (190 were *not* in ROW)	None reported
MTA	15	86	10	For RPD, 6 trees removed	Private contractors pruned 66 trees
PG&E		1,700	120	None reported	None reported
PORT	0	100	4	None reported	None reported
Presidio	300	2,000	100	None reported	None reported
PUC- CDD	0	100	34	None reported	None reported

Dept.	How many trees within the department's purview were:			Work the department performed for others:	Work other departments performed for the departments or org
	Planted	Cared for	Removed		
RPD	211	367	180	None reported	None reported
SFO	50	500	15	For CALTRANS, 25 trees planted, 200 cared for, and 3 removed	None reported
SFUSD	65	80	65	None reported	Private contractors cared for 30 and removed 45; FUF planted 57 and cared for 15.
SFSU	124	87	52	None reported	FUF cared for 61 trees; private contractors removed 5 trees.
TIDA	0	600	12	None reported	Public Works cared for ~200 trees and removed 12; Private contractors cared for ~400
UCSF	6	198	19	None reported	See other orgs for UCSF: planted 6, cared for 103, removed 19
TOTAL:	3277	14104	1810	5 departments and orgs reported providing services to other orgs (this chart + Planning)	

* Of the 1243 trees planted within Public Works jurisdiction, 452 were planted by Public Works, and 791 were permitted for planting. Of the 1172 tree removed or permitted for removal within Public Works jurisdiction, 295 were removed by Public Works, 696 were permitted for removal and replacement, and 181 permitted for removal without replacement

Table 3: Respondents were asked about species selection

Department	Most commonly planted species	Struggling species	Experimental species
CCSF	"N/A"	Monterey pine and eucalyptus	"N/A"
SFGH	<i>Olea europea</i> 'Swan Hill' (in containers); <i>Sequoia sempervirens</i> ; <i>Pyrus calleryana</i> 'Bradford'; <i>Tibouchina urvilleana</i>	(SFGH gardeners reported 4 removals due to tree death: 1 cedar, 2 redwoods, 1 birch)	None reported
LHH	Oak, Fremontodenrons, Ceanothus	Pines affected by pitch canker	Chiranthodendrons, Catalina ironwood
Public Works	<i>Lophostemon confertus</i> <i>Tristania laurina</i> <i>Acacia stenophylla</i>	The two species struggling the most are <i>Pyrus calleryana</i> and <i>Prunus serrulata</i> 'Kwanzan'. Many have not leafed out, or have barely leafed out and flowers were a few months late or not produced at all. We'll wait to see how they fair next Spring. At a conference in Santa Rosa on drought, a scientist said the <i>Prunus serrulata</i> 'Kwanzan' could have been impacted by a warmer than normal winter, not the drought. Exact cause is unknown. <i>Myoporum laetum</i> is still being heavily impacted by thrips.	<i>Eucalyptus citriodora</i> selected for the replacement median trees on Van Ness Ave at the conclusion of the BRT project.
FUF	#1: <i>Magnolia g. spp.</i> ; #2: <i>Tristaniopsis l.</i> ; #3: <i>Arbutus</i> 'Marina'	Reduced planting of <i>Pyrus k.</i> and <i>Pyrus c.</i> to disease and chill factor. <i>Prunus c.</i> 'KV' short lived. <i>Prunus serrulata</i> 'Kwanzan' uneven performer and substantial root system.	No

Department	Most commonly planted species	Struggling species	Experimental species
MTA	Podocarpus, Tristania, and Dodonaea	no	no
PG&E	No answer provided	No answer provided	No answer provided
PORT	No new trees	<i>Phoenix canariensis</i> due to Fusarium wilt. <i>Myoporum laetum</i> .	Not this year
Presidio	Monterey cypress, Monterey pine, Shore pine	<i>Tristania conferta</i>	MacNab cypress, Sargent's cypress, Pinaster pine
PUC-CDD	None at this time.	Monterey Pine and Myoporum	No
RPD	Monterey Cypress, Live Oak, and Coast Redwood	Monterey Pine, due to Pine Pitch Canker, though RPD has found vendor with resistant strain. Myoporum, due to Myoporum thrips; RPD trying clean and green variety	Canker-inoculated/resistant Monterey Pine
SFO	Coast live oak , California buckeye, Catalina ironwood	"n/a"	Banksia
SFUSD	"N/A"	Myoporum, Ficus, Monterey Pine, Monterey Cypress	Yes. Podocarpus
TIDA	Not applicable	Certain species of Eucalyptus	Not this year.
UCSF	Coast live oak, redwood, California buckeye	Metrosideros	"To be determined"

Table 4: Respondents were asked to rate commonly cited urban forest-related concerns on a 1-5 scale, with 1 being "not significant" and 5 being "extremely significant"

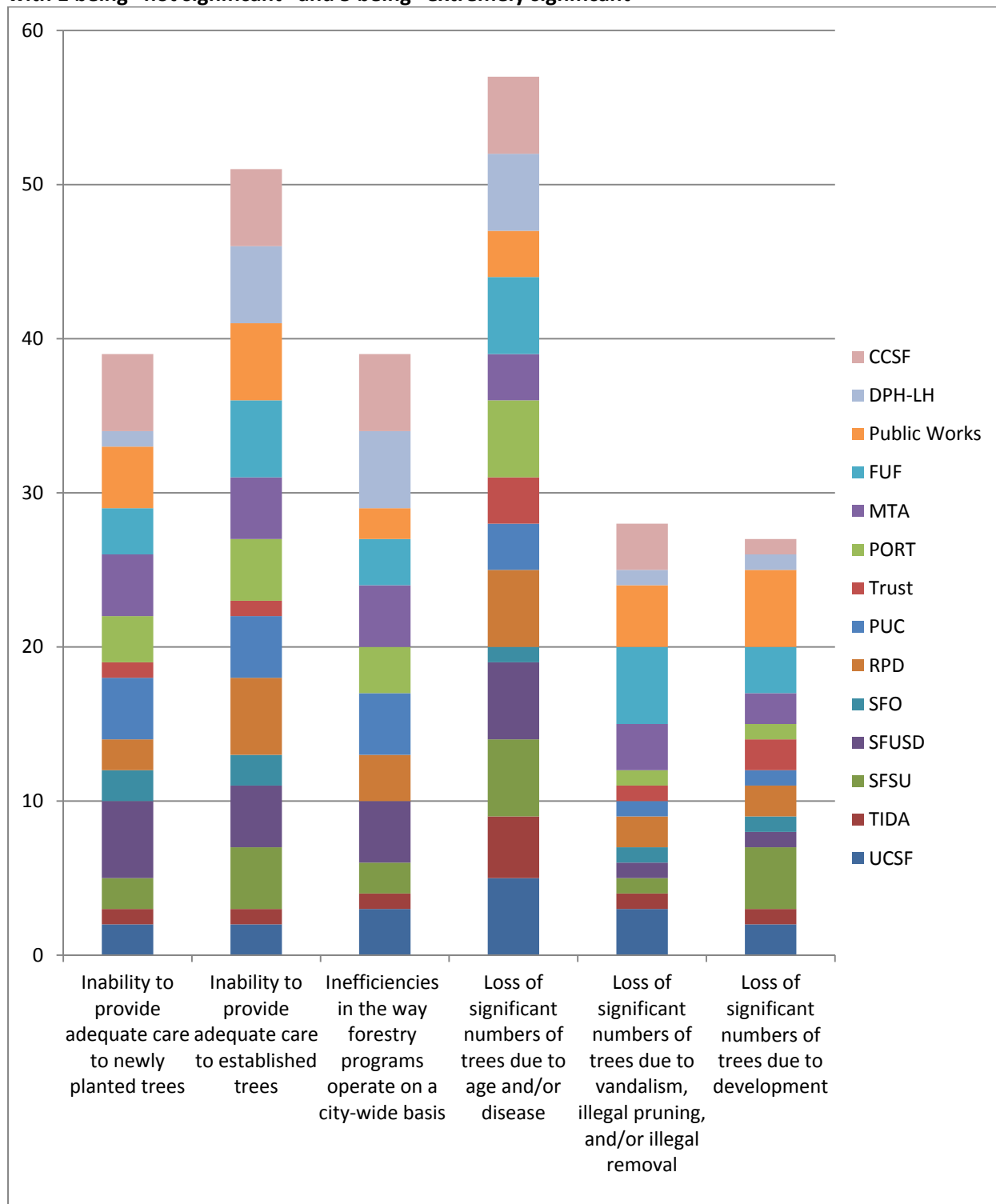


Table 5: Respondents were asked to rate commonly cited limitations on a 1-5 scale, with 1 being “not significant” and 5 being “extremely significant”

