



CITY OF REDWOOD CITY

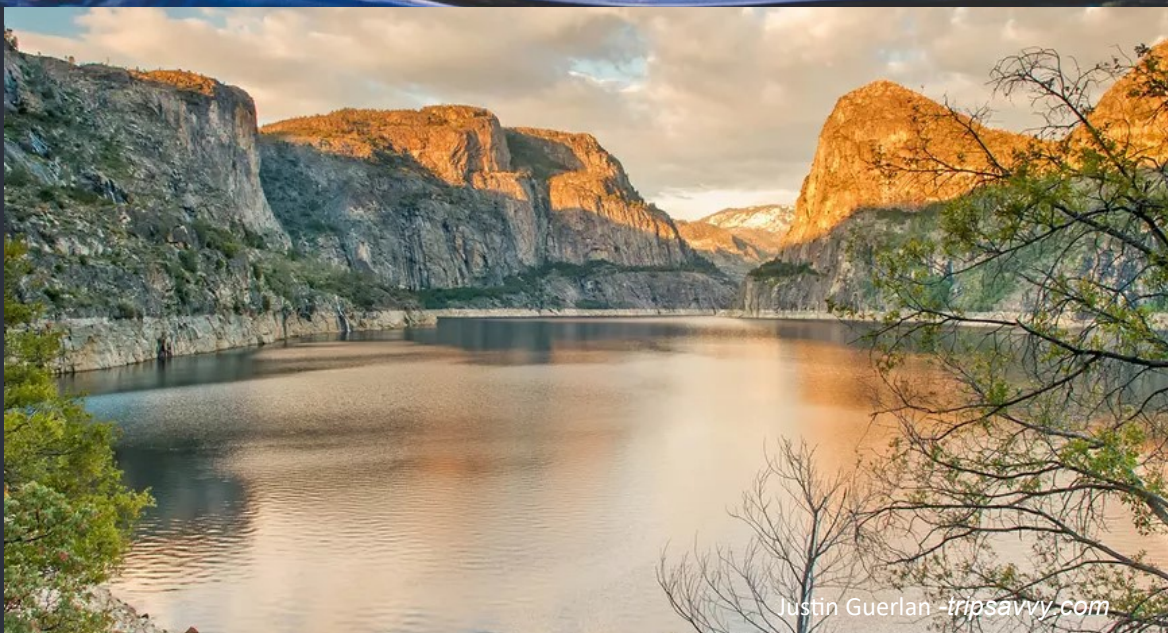
2018 ANNUAL WATER QUALITY REPORT

What's Inside:

- 1 Our Drinking Water Sources and Treatment
- 2 Protecting Our Watersheds
- 2 Contaminants and Regulations
- 3 Water Quality
- 3 Key Water Quality Terms
- 4-5 UCMR 3 & 4
- 6-7 Water Quality Data Table
- 8 Drinking Water and Lead
- 8 Special Health Needs
- 8 Fluoridation and Dental Fluorosis

This state-mandated report contains important information about your drinking water. Translate it, or speak with someone who understands it.

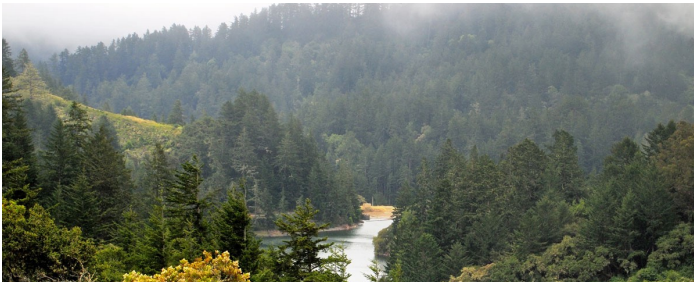
Este informe contiene información muy importante sobre su agua potable. Tradúzcalo o



OUR DRINKING WATER SOURCES AND TREATMENT

Supplied by the San Francisco Regional Water System (SFRWS), which is owned and operated by the San Francisco Public Utilities Commission (SFPUC), our major water source originates from spring Yosemite National Park snowmelt flowing down the Tuolumne River to storage in Hetch Hetchy Reservoir. The well protected Sierra water source is exempt from filtration requirements by the United States Environmental Protection Agency (USEPA) and the State Water Resources Control Board's Division of Drinking Water (SWRCB-DDW). Water from Hetch Hetchy Reservoir receives the following treatment to meet the appropriate drinking water standards for consumption: ultraviolet light and chlorine disinfection, pH adjustment for optimum corrosion control, fluoridation for dental health protection, and chloramination for maintaining disinfectant residual and minimizing the formation of regulated disinfection byproducts.

The Hetch Hetchy water is supplemented with surface water from local watersheds and upcountry non-Hetch Hetchy sources (UNHHS). Rainfall and runoff from the 35,000-acre Alameda Watershed in Alameda and Santa Clara counties are collected in Calaveras Reservoir and San Antonio Reservoir before delivery to the Sunol Valley Water Treatment Plant (SVWTP). Rainfall and runoff from the 23,000-acre Peninsula Watershed in San Mateo County are stored in Crystal Springs Reservoir, San Andreas Reservoir and Pilarcitos Reservoir, and are delivered to the Harry Tracy Water Treatment Plant. In 2018, the UNHHS was not used. Water at the two treatment plants is subject to filtration, disinfection, fluoridation, optimum corrosion control, and taste and odor removal.



Watersheds Protection

The SFPUC conducts watershed sanitary surveys for the Hetch Hetchy source annually and the local water sources as well as UNHHS every five years. The latest local sanitary survey was completed in 2016 for the period of 2011-2015. The last watershed sanitary survey for UNHHS was conducted in 2015 as part of the SFPUC's drought response plan efforts. These surveys evaluate the sanitary conditions, water quality, potential contamination sources and the results of watershed management activities. With support from partner agencies including National Park Service and US Forest Service, these surveys identified wildlife, stock, and human activities as potential contamination sources. You may contact the San Francisco District office of SWRCB-DDW at 510-620-3474 for review of these reports.

LAWN BE GONE!

Save water by removing your grass!

Redwood City residents and businesses are eligible to receive a rebate of \$1 per square foot for replacing lawn with a beautiful, drought tolerant landscape.

How do I receive a rebate?

Before removing your lawn:

- ◆ Submit an application, your plan and plant list.
- ◆ A representative will schedule a pre-inspection.
- ◆ Receive your notice to proceed.

Visit www.redwoodcity.org/conservation for more information and program requirements.



GET PAID TO TRANSFORM YOUR YARD!

CONTAMINANTS AND REGULATIONS

Generally, the sources of drinking water (both tap water and bottled water) include rivers, lakes, oceans, streams, ponds, reservoirs, springs and wells. As water travels over the surface of the land or through the ground, it dissolves naturally occurring minerals and, in some cases, radioactive material, and can pick up substances resulting from the presence of animals or from human activity. Such substances are called contaminants, and may be present in source water as:

- ◆ **Microbial contaminants**, such as viruses and bacteria that may come from sewage treatment plants, septic systems, agricultural livestock operations, and wildlife.
- ◆ **Inorganic contaminants**, such as salts and metals, that can be naturally-occurring or result from urban stormwater runoff, industrial or domestic wastewater discharges, oil and gas production, mining or farming.
- ◆ **Pesticides and herbicides**, that may come from a variety of sources such as agriculture, urban stormwater runoff and residential uses.
- ◆ **Organic chemical contaminants**, including synthetic and volatile organic chemicals, that are by-products of industrial processes and petroleum production, and can also come from gas stations, urban stormwater runoff, agricultural application and septic systems.
- ◆ **Radioactive contaminants**, that can be naturally-occurring or be the result of oil and gas production and mining activities.

More information about contaminants and potential health effects can be obtained by calling the USEPA's Safe Drinking Water Hotline 800-426-4791, or at www.epa.gov/safewater.

WATER QUALITY

The SFPUC's Water Quality Division (WQD) regularly collects and tests water samples from reservoirs and designated sampling points throughout the system to ensure the water delivered to you meets or exceeds federal and state drinking water standards. In 2018, WQD staff conducted more than 57,690 drinking water tests in the source, transmission, and distribution systems. This is in addition to the extensive treatment process control monitoring performed by the SFPUC's certified operators and online instruments.

The City of Redwood City also collects and tests water samples from the City's water system and storage reservoirs. Samples are collected weekly, monthly, and quarterly depending on the type of analyses to be performed. The City of Redwood City Water Division staff ensures water delivered within the water system meets or exceeds federal and state drinking water standards.

Drinking water, including bottled water, may reasonably be expected to contain at least small amounts of some contaminants. The presence of contaminants does not necessarily indicate that water poses a health risk. In order to ensure that tap water is safe to drink, the USEPA and SWRCB-DDW prescribe regulations that limit the amount of certain contaminants in water provided by public water systems. The U.S. Food and Drug Administration regulations and California law also establish limits for contaminants in bottled water that provide the same protection for public health.

Taste and Odor Treatment at Sunol Valley Water Treatment Plant

In response to an increase in the magnitude and frequency of algal blooms in Calaveras Reservoir and San Antonio Reservoir, the SFPUC initiated a taste and odor (T&O) control program for the SVWTP in 2018. The program will address seasonal taste and odor resulting from algal blooms in the reservoirs. The first component of this program is to a Powdered Activated Carbon facility to mitigate the occurrence of taste and odor compounds. A secondary benefit of using carbon for treatment will reduce the color of the water and formation of disinfection byproducts. The long-term component of the program is an ozonation treatment facility that is currently in design phase.

TO LEARN MORE

Additional water quality data may be obtained by contacting Justin Chapel at Redwood City Public Works Services (650) 780-7464.

Want to learn more about drinking water regulations? Visit the SWRCB Division of Drinking Water at www.swrcb.ca.gov/drinkingwater or the U.S. Environmental Protection Agency at www.epa.gov.

Water quality policies are decided at public hearings held at regularly scheduled City Council meetings. For more information visit www.redwoodcity.org.

Key Water Quality Terms

The following are definitions of key terms referring to standards and goals of water quality noted on the data table.

Public Health Goal (PHG): The level of a contaminant in drinking water below which there is no known or expected risk to health. PHGs are set by the California Environmental Protection Agency.

Maximum Contaminant Level Goal (MCLG): The level of a contaminant in drinking water below which there is no known or expected risk to health. MCLGs are set by the USEPA.

Maximum Contaminant Level (MCL): The highest level of a contaminant that is allowed in drinking water. Primary MCLs are set as close to the PHGs or MCLGs as is economically and technologically feasible. Secondary MCLs (SMCLs) are set to protect the odor, taste, and appearance of drinking water.

Maximum Residual Disinfectant Level (MRDL): The highest level of a disinfectant allowed in drinking water. There is convincing evidence that addition of a disinfectant is necessary for control of microbial contaminants.

Maximum Residual Disinfectant Level Goal (MRDLG): The level of a drinking water disinfectant below which there is no known or expected risk to health. MRDLGs do not reflect the benefits of the use of disinfectants to control microbial contaminants.

Primary Drinking Water Standard (PDWS): MCLs and MRDLs for contaminants that affect health along with their monitoring and reporting requirements, and water treatment requirements.

Regulatory Action Level: The concentration of a contaminant which, if exceeded, triggers treatment or other requirements that a water system must follow.

Treatment Technique (TT): A required process intended to reduce the level of a contaminant in drinking water.

Turbidity: A water clarity indicator that measures cloudiness of the water, and is also used to indicate the effectiveness of the filtration system. High turbidity can hinder the effectiveness of disinfectants.

Cryptosporidium is a parasitic microbe found in most surface water. The SFPUC regularly tests for this waterborne pathogen, and found it at very low levels in source water and treated water in 2015. However, current test methods approved by the USEPA do not distinguish between dead organisms and those capable of causing disease. Ingestion of *Cryptosporidium* may produce symptoms of nausea, abdominal cramps, diarrhea, and associated headaches. *Cryptosporidium* must be ingested to cause disease, and it may be spread through means other than drinking water.

KEY

< / ≤ = less than / less than or equal to **NL** = Notification level

AL = Action Level

NoP = Number of Coliform-Positive Sample

Max = Maximum

NTU = Nephelometric Turbidity Unit

Min = Minimum

ORL = Other Regulatory level

N/A = Not Available

ppb = part per billion

ND = Non-Detect

ppm = part per million

µS/cm = microSiemens/ centimeter

Unregulated Contaminant Monitoring Rule (UCMR)

Background

The 1996 Amendments to the Safe Drinking Water Act required the U.S. EPA to establish criteria for a monitoring program for unregulated contaminants and to publish, once every 5 years, a list of no more than 30 contaminants to be monitored by public water systems.

Recent Sampling Event

The most recent sampling event was UCMR 4 which took place in March through December of 2018. This sampling event requires public water systems to monitor for 10 cyanotoxins and 20 additional chemical contaminants. The City of Redwood City performed 4 quarters of sampling for chemical contaminants. There were 6 chemicals detected at low levels that did not exceed any MCLs. UCMR 4 sampling is not yet complete and monitoring will resume in August of 2020 for cyanotoxins.

Prior to that event was UCMR 3 in which the City of Redwood City performed sampling for 28 potential contaminants and two viruses from August 2014 through May 2015. Of the potential contaminants, only 4 were detected at very low levels. During each event samples were taken from one of our San Francisco Water Department interties and from various sample points in the City's distribution system.

The results of the detected contaminants can be found in the table on the next page.

Reporting

U.S. EPA is essentially silent on the issue of reporting federal UCMR contaminants beyond the previous calendar year's detections, other than to say it is not required and that data older than 5 years need not be reported. As a result, the State Board recommends systems to report the data for 5 years.

For More Information

Unregulated contaminant monitoring helps the U.S. EPA and the State Water Resources Control Board to determine where certain contaminants occur and whether the contaminants need to be regulated. To view the results of sampling for the Unregulated Contaminant Monitoring Rule conducted by Redwood City please visit our website at www.redwoodcity.org/waterquality.

Visit Redwood City's

Native plant demonstration garden

The Redwood City Parks Department, and volunteers converted this area from turf to a native garden. The volunteers attended a workshop sponsored by Redwood City's Water Conservation Program "How to convert turf to a water efficient landscape", and the result of their work is a garden that's educational, supports wildlife, and uses a lot less water.

Location:

Redwood City Public Works



Unregulated Contaminant Monitoring Rule (UCMR) Results

UCMR4 Detected Contaminants	Unit	MCL	PHG or (MCLG)	Range or Level Found	Average or [Max]	Major Sources in Drinking Water
Haloacetic Acids						
Bromochloroacetic Acid (BCAA)	ppb	N/A	N/A	0.374 - 0.977	0.642	Degradation of disinfectant
Dichloroacetic Acid (DCAA)	ppb	N/A	N/A	12.8 - 32.6	19.8	Degradation of disinfectant
Monochloroacetic Acid (MCAA)	ppb	N/A	N/A	2.05 - 2.77	2.45	Degradation of disinfectant
Trichloroacetic Acid (TCAA)	ppb	N/A	N/A	8.28 - 16.20	12.86	Degradation of disinfectant
HAA5	ppb	60	N/A	31.9 - 37.5	34.75	Degradation of disinfectant
Metals						
Maganese	ppb	2	N/A	1.33 - 1.99	1.75	Byproduct of drinking water
UCMR3 Detected Contaminants						
Strontium	ppb	N/A	N/A	15-47	28	Erosion of natural and pipe deposits
Vanadium	ppb	50 (NL)	N/A	0.2-0.3	0.25	Erosion of natural and pipe deposits
Chromium-6	ppb	10	0.02	0.03-0.05	0.04	Erosion of natural deposits; industrial discharges
Chlorate	ppb	800 (NL)	N/A	94-180	131	Degradation of disinfectant



City of Redwood City—Water Quality Data for Year 2018 ⁽¹⁾

Detected Contaminants	Unit	MCL	PHG or (MCLG)	Range or Level Found	Average or [Max]	Major Sources in Drinking Water
Turbidity						
Unfiltered Hetch Hetchy Water	NTU	5	N/A	0.3 - 0.8 ⁽²⁾	[1.8]	Soil Runoff
Filtered Water from Sunol Valley Water Treatment Plant (SVWTP)	NTU -	1 ⁽³⁾ Min 95% of samples ≤ 0.3 NTU ⁽³⁾	N/A N/A	- 99.96% - 100%	[1] -	Soil Runoff Soil Runoff
Filtered Water from Harry Tracy Water Treatment Plant (HTWTP) ⁽¹³⁾	NTU -	1 ⁽³⁾ Min 95% of samples ≤ 0.3 NTU ⁽³⁾	N/A N/A	- 100%	[0.7] -	Soil Runoff Soil Runoff
Disinfection Byproducts and Precursors						
Total Trihalomethanes	ppb	80	N/A	19.2 - 50.2	[37.4] ⁽⁴⁾	Byproduct of drinking water disinfection
Haloacetic Acids	ppb	60	N/A	25.3 - 38.1	[32.0] ⁽⁴⁾	Byproduct of drinking water disinfection
Total Organic Carbon ⁽⁵⁾	ppm	TT	N/A	1.2 - 2.9	2.2	Various natural and man-made sources
Microbiological						
Total Coliform	-	NoP ≤5.0% of monthly samples	(0)	-	[0.08%]	Naturally present in the environment
<i>Giardia lamblia</i>	Cyst/L	TT	(0)	0 - 0.24	0.03	Naturally present in the environment.
Inorganics						
Fluoride (source water) ⁽⁶⁾	ppm	2.0	1	ND - 0.7	0.3 ⁽⁷⁾	Erosion of natural deposits; water additive to promote strong teeth
Chloramine (as chlorine)	ppm	MRDL=4.0	MRDLG=4	0.02 - 3.22	[2.56] ⁽⁸⁾	Drinking water disinfectant added for treatment
Constituents with Secondary Standards	Unit	SMCL	PHG	Range	Average	Major Sources of Contaminant
Chloride	ppm	500	N/A	<3 - 17	8.9	Runoff / leaching from natural deposits
Color	unit	15	N/A	<5 - 7	<5	Naturally-occurring organic materials
Specific Conductance	μS/cm	1600	N/A	29 - 221	154	Substances that form ions when in water
Sulfate	ppm	500	N/A	0.9 - 29	16	Runoff / leaching from natural deposits
Total Dissolved Solids	ppm	1000	N/A	<20 - 144	82	Runoff / leaching from natural deposits
Turbidity	NTU	5	N/A	ND - 0.3	0.1	Soil runoff
Lead and Copper	Unit	AL	PHG	Range	90th Percentile	Major Sources in Drinking Water
Copper	ppb	1300	300	< 1 - 96 ⁽⁹⁾	48.5	Internal corrosion of household water plumbing systems
Lead	ppb	15	0.2	<1 - 9.8 ⁽¹⁰⁾	2.8	Internal corrosion of household water plumbing systems

City of Redwood City—Water Quality Data for Year 2018

Other Water Quality Parameters	Unit	ORL	Range	Average
Alkalinity (as CaCO ₃)	ppm	N/A	<3 - 132	51
Boron	ppb	1000 (NL)	ND-104	ND
Bromide	ppb	N/A	<5-27	7
Calcium (as Ca)	ppm	N/A	2.9 - 18	11
Chlorate ⁽¹¹⁾	ppb	800 (NL)	42 - 230	124
Hardness (as CaCO ₃)	ppm	N/A	15 - 68	47
Magnesium	ppm	N/A	<0.2 - 6.2	4.0
pH	-	N/A	8.6 - 9.8	9.4
Potassium	ppm	N/A	0.2 - 1.0	0.6
Silica	ppm	N/A	2.8 - 7.1	5.0
Sodium	ppm	N/A	2.3 - 20	14
Strontium	ppb	N/A	12 - 199	99



Footnotes:

- (1) All results met State and Federal drinking water health standards.
- (2) These are monthly average turbidity values measured every 4 hours daily.
- (3) There is no turbidity MCL for filtered water. The limits are based on the TT requirements for filtration systems.
- (4) This is the highest locational running annual average value.
- (5) Total organic carbon is a precursor for disinfection byproduct formation. The TT requirement applies to the filtered water from the SVWTP only.
- (6) The natural fluoride levels in the upcountry sources were ND. Elevated fluoride levels in the SVWTP and HTWTP raw water are attributed to the transfer of fluoridated Hetch Hetchy water into the local reservoirs.
- (7) In May 2015, the SWRCB recommended an optimal fluoride level of 0.7 ppm be maintained in the treated water. In 2018, the range and average of the fluoride levels were 0.6 ppm - 1.0 ppm and 0.7 ppm, respectively.
- (8) This is the highest running annual average value.
- (9) The most recent Lead and Copper Rule monitoring was in 2018. 0 of 31 site samples collected at consumer taps had copper concentrations above the AL.
- (10) The most recent Lead and Copper Rule monitoring was in 2018. 0 of 31 site samples collected at consumer taps had lead concentrations above the AL.
- (11) The detected chlorate in the treated water is a degradation product of sodium hypochlorite used by the SFPUC for water disinfection.



My water has a new look and added features. The updated customer portal and new mobile app brings your water use, water outages and billing information to your fingertips. Conservation made easy! My Water's core purpose is to empower customers through better customer service so that we all may use water more wisely, and in turn, save money and help the environment.

My Water allows you to:

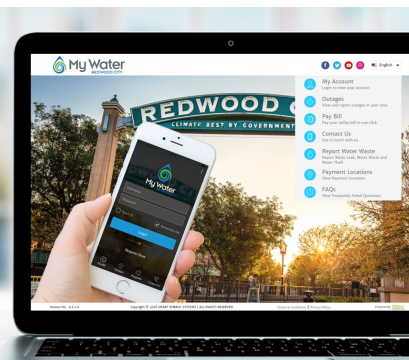
- View hourly water use
- Sign up for notifications
 - Leak Alerts
 - Outages
- View your bill
- Compare use with others

EVERYTHING JUST GOT A LOT EASIER

Now you can manage your account through our brand new Customer Portal

Register Today

Or download the mobile app!



To get started, visit www.mywater.redwoodcity.org and register using your account number.



DRINKING WATER AND LEAD

Lead in drinking water is primarily from materials and components associated with service lines and home plumbing. There are no known lead service lines in the SFRWS. We are responsible for providing high quality drinking water, but cannot control the variety of materials used in plumbing components. It is possible that lead levels at your home may be higher than at others in the community as a result of materials used in your home's plumbing.

If present, elevated levels of lead can cause serious health problems, especially for pregnant women and young children. Infants and young children are typically more vulnerable to lead in drinking water than the general population. You can minimize the potential for lead exposure, when your water has been sitting for several hours, by flushing your tap for 30 seconds to 2 minutes (or until the water temperature has changed) before using water for drinking or cooking.

The City of Redwood City has received requests from 6 schools within the water system's service area to sample for lead in drinking water.

If you are concerned about lead levels in your water, you may wish to have your water tested. Additional information on lead in drinking water, testing methods, and steps you can take to minimize exposure is available from the USEPA's Safe Drinking Water Hotline: 800-426-4791, or at www.epa.gov/lead.

SPECIAL HEALTH NEEDS

Some people may be more vulnerable to contaminants in drinking water than the general population. Immuno-compromised persons, such as those with cancer undergoing chemotherapy, persons who have undergone organ transplants, people with HIV/AIDS or other immune system disorders, some elderly people and infants, can be particularly at risk from infections.

These people should seek advice about drinking water from their health care providers. USEPA/CDC guidelines on appropriate means to lessen the risk of infection by *Cryptosporidium* and other microbial contaminants are available from the USEPA's Safe Drinking Water Hotline 800-426-4791 or visit their website: www.epa.gov/safewater.

FLUORIDATION AND DENTAL FLUOROSIS

Mandated by State law, water fluoridation is a widely accepted practice proven to be safe and effective for preventing and controlling tooth decay. The SFPUC's fluoride target level in the water is 0.7 milligram per liter (mg/L, or part per million, ppm), consistent with the May 2015 State regulatory guidance on optimal fluoride level. Infants fed formula mixed with water containing fluoride at this level may still have a chance of developing tiny white lines or streaks in their teeth. These marks are referred to as mild to very mild fluorosis, and are often only visible under a microscope. Even in cases where the marks are visible, they do not pose any health risk. The Centers for Disease Control (CDC) considers it safe to use optimally fluoridated water for preparing infant formula. To lessen the chance of dental fluorosis, you may choose to use low-fluoride bottled water to prepare infant formula. Nevertheless, children may still develop dental fluorosis due to fluoride intake from other sources such as food, toothpaste and dental products.

Contact your health provider or SWRCB-DDW if you have concerns about dental fluorosis. For additional information about fluoridation or oral health, visit the CDC website:

www.cdc.gov/fluoridation or

SWRCB-DDW website :

www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/Fluoridation.shtml.

2018 ANNUAL WATER QUALITY REPORT



City of Redwood City
Water Utility Services
1400 Broadway
Redwood City, CA 94063-2505
Phone: 650-780-7464
www.redwoodcity.org

