

August 19, 2014

Richard Fahey Village Green Declining Redwood Trees – Public Announcement

Over the past several months, San Ramon residents of the Ponderosa Homes neighborhood near Richard Fahey Village Green have voiced concern to local media and the San Ramon City Council regarding the declining condition of the Redwood trees in the park. As a result, Public Services staff initiated a series of investigations, which have now been completed; into allegations made that the City and its maintenance contractors are responsible for damaging trees with negligent use of herbicides applied in the park to control weeds.

In addition, a homeowner filed a complaint with the Environmental Protection Agency which led to an investigation by the Contra Costa County Department of Agriculture. In response, City staff completed in-depth research and compiled the following facts and information to be made available to the public. Staff is planning to send out a summary of our findings to the residents in the area of Village Green to provide them with the factual information that these investigations have revealed.

Pesticide Facts & City Credentials

- The City of San Ramon is regulated by the State Department of Pesticide Regulation and the Contra Costa County Department of Agriculture requiring on-going training, use reporting, and record keeping.
- The City is subject to mandatory annual inspections and random inspections by the County.
- The City complies with all laws and regulations and has never been cited for a violation.
- The City has a written Integrated Pest Management Policy.
- The City's contractors are required to comply with the same laws and regulations.
- "Speed Zone" herbicide is registered by the Environmental Protection Agency for use on ornamental turf including parks. EPA Registration No. 2217-835
- "Ranger Pro" herbicide is registered by the Environmental Protection Agency for use on weeds including parks, recreational and residential areas. EPA Registration No. 524-517

Licensure – Designated Public Services staff hold the following licenses:

1. Pest Control Adviser License – Categories A) Insects, Mites, and other Invertebrates, D) Vertebrate Pests, E) Weeds
2. Qualified Applicators Certificate – Categories A) Residential, Industrial, and Institutional, B) Landscape Maintenance, C) Right of Way, D) Plant Agriculture, E) Forest, F) Aquatic

Background/Richard Fahey Village Green (RFVG)

- 4.5 acre Park dedicated and opened in 1996.

- About 40 Redwood trees located along sound wall on north border of site.
- EBMUD converted the park irrigation to recycled water in 2006.
- In approximately 2008, the Redwood trees began to show signs of stress and decline.
- By 2014 the Redwood trees are in severe distress. All trees in the park thrived until converting to recycled water.
- This distress can be caused by the ongoing drought conditions as well.
- Local residents attended City Council meetings and presented during public comment that the City was killing the trees with the inappropriate use of “Speed Zone” herbicide at RFVG.
- Many of the Redwood trees are located on a slope separated from the turf by a baseball infield, concrete walkway, and retaining wall eliminating potential exposure to any “Speed Zone” application made on the turf field.
- Use report records indicate that “Speed Zone” was used one time in 2012 by the City for spot control of weeds on the turf field.
- The City’s contractor used “Ranger Pro” at the park in April 2014. “Ranger Pro” contains the same active ingredient (Glyphosate) as the herbicide “Round Up”.
- There was a misapplication of herbicide by the city’s contractor in April that resulted in some dead turf around and near approximately 20 trees located in turf areas. This misapplication was caused by mechanical malfunction of the spray equipment or human error. The product used was “Ranger Pro” which is the same chemical as “Round Up” and would not kill the trees. The trees were already distressed before the “Ranger Pro” was applied. The contractor has taken responsibility for this, and has repaired the area fully with new sod.
- The City collected soil and tissue samples from RFVG Green, Athan Downs (AD), and Central Park (CP) and sent them to a lab for analysis. The lab report indicates excessive levels of sodium and boron. The lab report also indicates that insignificant levels of residual herbicides are present in the soil.
- The City hired an independent consulting arborist to evaluate the trees at RFVG as well as trees at AD and CP and prepare a report with his findings. A summary of the findings are:
 - VG and AD irrigated with recycled water have much higher sodium and boron concentrations than is suitable for Redwood trees.
 - CP irrigated with potable water has much lower sodium and boron levels.
 - The on-going drought is contributing to the decline of the trees.
 - There are some foliar fungal diseases present on the Redwood trees, contributing to the poor appearance.
 - The Redwood trees at VG and AD are experiencing decline most likely due to the combination of recycled water irrigation and the drought conditions reducing the natural precipitation leaching of salts in the soil.
- The Contra Costa County Department of Agriculture conducted an investigation into the allegations of inappropriate use of herbicide in relation to the declining health of the trees. City staff provided interviews, detailed records and reports as part of the investigation. The investigation was reported to be inconclusive.

- City staff did a site visit to inspect the contractor's operation in Hayward to verify compliance with chemical storage and handling per the regulatory requirements.

Additional Information

- Redwood trees at sites throughout the City that are NOT irrigated with recycled water are in seemingly good shape. The majority of the distressed Redwood trees throughout the City of San Ramon are located at sites that are irrigated with recycled water. In general, Redwood trees at sites that are irrigated with potable water do not appear to be declining and show little signs of distress.
- Multiple years of drought conditions may contribute to decline in tree health throughout all areas of the City.
- The City owned and maintained tree inventory includes over 30,000 trees. The tree mortality rate in the City related to tree deaths by all causes is estimated to be less than .25% annually.
- In 2009, the City of Dublin had a Redwood Tree/Recycled Water Study conducted by an independent consultant. The report indicates that the declining trees are, in part the result of sodium and chloride toxicity from the use of recycled irrigation water.
- Maintenance specifications and practices for the control of weeds and the application of herbicides are the same for all parks in San Ramon.
- VG was converted to recycled water in 2006. Shortly thereafter, the Redwood trees at the site began to decline and today they are badly distressed. Similarly, AD was converted to recycled water in 2007 and a gradual decline of the Redwood trees there has been noticed over the past few years.
- Current drought conditions may be contributing to an accelerated rate of decline of the Redwood trees. Without fresh water from rain to flush out the minerals and salts from the soil, the salt content builds up in the trees.
- In 2005, prior to being converted to recycled water, EBMUD conducted site evaluations including soil testing at both VG and AD. The results of the evaluations indicated that soil chemistry for most elements tested were within the normal range and provided acceptable soil conditions for the turf, trees, and plants at the two sites.

Soil and Tissue Laboratory Analysis

To evaluate current soil conditions following years of recycled water irrigation, City staff collected various soil and tissue samples in the last few months at VG and AD and sent them to a lab to be tested and analyzed by a Landscape Agronomist at CLC Labs. In addition, City staff collected and sent samples from Central Park (CP) which is irrigated with potable EBMUD water and where the Redwood trees are relatively healthy.

The soil and tissue report indicates that boron and sodium levels are extremely excessive at VG and AD. The analysis found that the levels of boron and sodium at VG and AD are many times higher than what is optimal for Redwood trees according to "Soil Test Calibration Standard Research" by major US Universities. The report concluded that boron and/or sodium toxicity is suspected from high soil boron and sodium levels and visual

foliar symptoms are consistent with boron and/or sodium toxicity. The soil samples taken from CP indicated levels of boron and sodium slightly higher than optimal levels. The results of the analysis indicate the following soil sodium levels:

Soil sodium levels parts per million (ppm) (normal range is 50 - 150 ppm)

	<u>2005*</u>	<u>2014</u>
VG	<100 ppm	1,116 ppm
AD	<100 ppm	1,092 ppm
CP	NA	157 ppm

*prior to recycled water conversion

City staff has begun watering some of the trees at VG with tanked in potable water to attempt to flush out some of the sodium in the soil from the recycled water. This watering will go on for a period of two to three months at which time another soil sample will be tested. Depending on the results observed in the condition of the Redwood trees, staff will evaluate options and costs for either a permanent potable watering solution or to replace the trees with a more suitable species that is more tolerant of recycled water. In either case, there would be capital costs associated.