



DATE: September 18, 1999 **ATTACHMENT A**

TO: Ed Gawf, Director of Planning and Community Environment

FROM: Dave Dockter, Managing Arborist, Planning Division

SUBJECT: *The El Palo Alto Redwood Tree - Arborist Report and Appraisal*

PURPOSE: Respectfully prepared for City Council review as Attachment A of the City Managers Report

ARBORIST REPORT

This report provides historic data information for the Coast Redwood tree known as El Palo Alto. The report has been prepared for the purpose of providing City Council an overview of the tree's size, health, history and value to the community, and to enable an informed decision of designating the tree as City of Palo Alto Heritage Tree #1, in addition to its designation as California Historical Landmark No. 2.

LOCATION OF THE TREE

The tree is located in El Palo Alto Park, at the intersection of El Camino Real, Alma Street, and Palo Alto Avenue, in the City of Palo Alto, Santa Clara County, State of California. The tree is situated on the bank of San Francisquito Creek, adjacent to a Caltrain rail and trestle owned by Southern Pacific/Joint Powers Board jurisdiction and a pedestrian bridge (circa 1988) joining Menlo Park and Palo Alto together.

SPECIES, HABITAT, SIZE AND AGE OF THE TREE

The subject tree, named El Palo Alto, is a *Sequoia sempervirens*, Coast Redwood. Redwoods are native to California and indigenous along the cool central coast, mountains and various riparian areas that offer adequate moisture and favorable drainage and soil composition. The tree trunk is 90-inches in diameter, 110-feet in height and has a crown spread of 40-feet. In 1951, El Palo Alto height was recorded at 134.6-feet. By 1977 the tall top had died back to 126-feet down to its current height of 110-feet. In 1955, George Hood, Palo Alto arborist extraordinaire, had increment borings of the tree rings taken by a forester and determined the tree's age to be 1,015 years. El Palo Alto is now 1,059 years old as seen today.

HEALTH AND CONDITION OF THE TREE

El Palo Alto is in relatively fair health and condition, and has endured may seasonal drought and flood years spanning the centuries including substantial urban activity encroaching the area during the most recent century. Its location is far downstream on the southern bank of San Francisquito Creek, the only remaining non-channeled creek from the mountains to the S. F. bay estuary. Typically, the favorable conditions for Coast Redwoods (soil profile, drainage and texture) erode quickly nearer to the bay where heavy silt mud prevails. However, observation indicates that the tree is:

- ❖ well-rooted with little chance of toppling over
- ❖ supporting fair annual shoot growth over each of the last 5 years (an average of six-inches)
- ❖ exhibits a fuller canopy than 50 years ago
- ❖ producing wound-wood callus and sprouts in several areas
- ❖ indicates that the trunk continues to expand

HISTORICAL SIGNIFICANCE

Significant and commonly accepted historical event highlights surrounding the El Palo Alto Redwood are as follows:

- ❖ The Coast Redwood attributed to be *El Palo Alto* by the Spaniards means 'the tall stick' and is anchored on the banks of San Francisquito Creek, 'Little Saint Francis'.
- ❖ November 6-11, 1769 while searching for Monterey Bay, Spanish explorer General Portola and expedition camped under the giant redwood. Frequented by the local Costanoan/Ohlone Indians, the land near El Palo Alto was selected as the area's first mission site by the Franciscan Colonel De Anza in 1775, but was later moved to Mission Santa Clara.
- ❖ In 1769, El Palo Alto was twin-trunked. Traditional history states that in January of 1886 the left trunk fell after 24-inches of rain fell within three months, leaving only one spar left to stand. However, several historians and arborists indicate this as theory rather than fact, citing that El Palo Alto's missing trunk had mysteriously vanished during the time when Southern Pacific Railroad's (new) trestle bridge was erected near the tree's base, and that the event may not necessarily have been an 'act of God' as traditional history reports.
- ❖ At the time of the 1776 signing of our national constitution, the El Palo Alto redwood was 836 years old.
- ❖ In 1850, El Palo Alto was used as a sighting tree by surveyors plotting out a highway called San Francisco-San Jose Road, now called El Camino Real. In 1861, groundbreaking for the Pacific Railway trestle undoubtedly impacted the tree.
- ❖ After Leland Stanford University was founded, the El Palo Alto Redwood was the rallying point for a yearly class contest to see who could place the class flag at the top of the tree. The last student to climb the tree on the eve of Admission Day, 1909 became marooned in the crown after dark, and needed to be rescued by fellow students.
- ❖ In 1926, a bronze plaque was mounted on a boulder (furnished by Southern Pacific Railroad) by the Native Sons of the Golden West. The plaque shows that El Palo Alto was once a twin-trunked tree as reported by early California explorers and inhabitants.
- ❖ In 1937, the State of California adopted the Coast Redwood species as the state tree, and in 1968 memorialized El Palo Alto as a California Historical Landmark No. 2.
- ❖ In June of 1971, El Palo Alto Park was added to the City's Parks Dedication list.
- ❖ In 1987, the El Palo Alto redwood was recognized by the National Arborist Association and International Society of Arboriculture for its historical significance as "A campsite for the Portola Expedition Party of 1769".
- ❖ Santa Clara County names El Palo Alto a Point of Historical Interest.

MAINTENANCE OF THE TREE -- PAST, PRESENT AND FUTURE

El Palo Alto has been the recipient of significant care over the former and present century including:

- ❖ In 1776, the tree was measured at 135.7-feet with a circumference of 15.1-feet. In 1814, measurement found a height of 162.2 feet. It was reported that when the twin trunk fell in 1886, a dendrology ring-count indicated an age of 960 years.
- ❖ After the fall of the twin trunk, Senator Stanford had a wooden bulkhead erected to protect the remaining trunk.
- ❖ From 1925-1935, George Hood's father watered El Palo Alto two days a week, pouring buckets of water into three vertical terra cotta pipes. From 1935-1955, paths near the tree were changed, obscuring the watering pipes and the tree declined. Since 1968, El Palo Alto's condition (vigor, structural integrity and soil stability) has been evaluated by tree care professional S.P. McClenahan Company, initiated by the supervision of University of California Forester Woody Metcalf, who watched over the tree for 40 years. The tree is currently under the supervision of the qualified arboricultural staff, Dave Sandage and Dave Dockter of the City of Palo Alto.
- ❖ In 1968 the treetop was treated for termites, and in 1971 aerial inspection noted no termites and in fair health.
- ❖ A summer of 1973 inspection noted serious decline of the western portion of the treetop and termite treatment again initiated.
- ❖ In 1997, Doug Hamilton, University of California Cooperative Extension Farm Advisor and Forester inspected El Palo Alto redwood.
- ❖ A 1977 inspection noted improvement. Five feet of the dead top was removed. A sprinkler system at the top was modified to provide conditions similar to optimum foggy coastline conditions.
- ❖ 1982 to 1984 foliage growth increased. However, the weathered western side continued to deteriorate and hollow soundings were recorded within the larger limb structure.
- ❖ In 1985, the upper portion of the tree canopy was sparse and declining. The condition was determined to be from atrophy of the roots from the increasing foot traffic, landscape activity and compaction. Four inches of mulching was prescribed. In addition, a small dead portion of the top was removed.
- ❖ In 1987, fertility treatments commenced (soil loosening/vertical mulching in spring and deep root injections in summer).
- ❖ 1988-present, routine inspections and as-needed pruning by the City of Palo Alto occur annually. To improve health and vigor, fertility treatments prescribed include a bio-stimulant designed to increase absorbing root surface area.
- ❖ 1998 El Nino winter flooding of San Francisquito Creek and bank erosion did not alter the stability of the El Palo Alto redwood.
- ❖ As guardians and stewards of the El Palo Alto Redwood, a significant natural and historical resource, the future maintenance by the City of Palo Alto will include any and all arboricultural methods that are deemed appropriate by City arborists and consultants.

APPRAISAL

National, state, municipal and real estate agencies recognize that plants have value beyond their intrinsic or aesthetic contribution to a landscape, and that a monetary value can be assessed. The following horticultural appraisal, using the current Guide for Plant Appraisal authored by the Council of Tree and Landscape Appraisers and published by the International Society of Arboriculture, includes consideration of the tree species, size, condition and location factors which can influence the value of a tree. The appraised value of the Coast Redwood known as El Palo Alto is estimated to be a modest \$55,600.00, using the current methodology established by the *Guide for Plant Appraisal* published by the Council of Tree and Landscape Appraisers. However, this value does not fully incorporate or consider significant cultural and historic importance. **Therefore, because of the tree's cultural history, intrinsic majestic presence and value to the communities of Palo Alto, Menlo Park and their surrounding environs, the El Palo Alto redwood is considered to be an invaluable and priceless natural resource--and irreplaceable at any cost in the event of loss.**

Notwithstanding a catastrophic event that would take the tree, it is expected that the El Palo Alto Redwood will persevere and grow for centuries to come, and will continue to be the most important living natural resource in Santa Clara County and one of the top destination Historic Landmarks in the golden State of California.

RESOURCES

City of Palo Alto records
Palo Alto Historical Society
George Hood 1977 memorandum
Trees of Palo Alto, 1976 Publication
The Tall Tree, 1940 Publication, Ellnor V. Cogswell
Jim Johnson, Personal communication
City Council 1988 Staff Report, George Bagdon, Director of Public Works
Dave Sandage, City of Palo Alto, Public Works Managing Arborist
Wayne Fluss, City of Palo Alto Arborist
Dave Dockter, City of Palo Alto, Managing Arborist in Planning



EL PALO ALTO
As it stood 100 years ago

Circa 1880's

Circa 1951
One trunk is missing, a new iron trestle bridge was built and damaging coal soot and smoke conditions subjected El Palo Alto to decline for decades.





EL PALO ALTO
As it stands today

For centuries, the coast redwood tree has functioned as the primary sentinel and gateway to this region. The oldest living California Historical Landmark No.2 has been central to the City of Palo Alto since its incorporation in 1894 and Stanford University for over a century. In 1955, an increment boring of the tree rings was taken and the tree's age was accurately determined to be 1,015 years, and in 2004 was 1,064 years old. The tree stands anchored to the San Francisquito Creek bank with a trunk size of over eight feet in diameter. In 1951 its height was 134.6-feet, in 1977 its height was reduced to 126-feet to remove the dead top, and again in 1999 where it still stands at nearly 110-feet in height.

From 1865-1955, the tree was in serious decline with alarmingly sparse branching and foliage. Implicating factors of decline were (1) the foliage was coated with coal-burning train soot which passed beneath the tree's canopy on a daily basis and, (2) the increasing reduction of the aquifer (available water table) from wells in the thriving orchards of the 'blossom valley', including the 1912 Tower Well only two blocks away. It is surmised that by 1955, the disappearing orchards and county water district program to cap wells helped to recharge the aquifer in the region back to a level that the El Palo Alto redwood had historically grown accustomed. In spite of an eroding top, aerial termites and an associated decay column on the west side of the top (left side), the tree today has a much greater volume of foliage and biomass and is healthier today than nearly a century ago.

Excepting a catastrophic disaster, the life expectancy and prognosis for the El Palo Alto redwood is that it will continue to overlook the region for at least 300 more years.



El Palo Alto—Circa 2001
Towers above the railroad trestle in the center of this image

El Palo Alto

Circa: 1998



Top cut off El Palo Alto at the 110-foot height. Cursory dendrology count was 157 rings. Termites and decay are evident around the perimeter.



ON SOLID GROUND

For centuries, the tree roots have established themselves firmly into the soil and deflected creek bank erosion where it otherwise would be washed away. The massive tree used to have a second spar located on the left side of this trunk. Wound-wood has callused over other smaller sections and sprouts are now growing in the area.



In 1926 the Native Sons of the Golden West mounted a plaque on a boulder at the base of the tree, showing that El Palo Alto was once a twin-trunked tree as reported by the early California explorers and inhabitants.



In 1987, the National Arborist Association recognized the tree with the International Society of Arboriculture for its historical significance as noted by General Portola's 1786 expedition search for California Monterey. At the time of the 1776 signing of our national constitution, El Palo Alto was 836 years old.