

Date: August 14, 2007

To: Mayor and City Council
From: Elaine Polachek, Director of Community Maintenance
Subject: Date Palm Replacements in Palisades Park

Introduction

A recent a study of the 300+ Canary Island Date Palms (*Phoenix canariensis*) in Palisades Park has been completed with the determination that 44 dead and dying palms will require removal. This species of palm is subject to three fatal diseases but primarily *Fusarium Wilt of Canary Island Date Palm* for which there is no cost-effective treatment on a wide scale. The photo at right shows a declining Date Palm in the foreground with a dead one to its right.

The Canary Island Date Palm is the fourth most predominant tree in the city's tree inventory and the signature tree of Palisades Park. As a part of the City's community forest renewal program it is necessary to replace these trees as they begin to show signs of decline and/or die to reduce the continued

spread of the disease, eliminate potential tree failures and ultimately reduce liability exposure to the city.



Staff's analysis concludes that following removal of the dead and dying Date Palms a different species should be used for the following reasons: 1) there is evidence suggesting that the fungus may be transmitted to other palms of the same species within Palisades Park and 2) if this should occur there is the eventual risk of losing all of the Date Palms in Palisades Park with no other existing palm species to replace them.

Discussion

Unlike most fungal diseases of palms, the primary disease that is killing off the Date Palms is host specific, with that host being Canary Island Date Palms. The name of the disease is "*Fusarium Wilt of Canary Island Date Palm*" and it was given to this disease to distinguish it from two other *Fusarium* wilt diseases that occur on other species of palms, which are also host specific.

Fusarium Wilt of Canary Island Date Palm is caused by the fungus *Fusarium oxysporum* f. sp. *canariensis*. It was first documented in the U.S. in the 1970s in California. The disease has been observed in Australia, France, Greece, Italy and Japan. The fungus causes the palm to wilt by obstructing the water-conducting tissue, resulting in a dried out appearance and ultimately death. The fungus produces short-lived air-borne spores as well as spores that will live in the soil and plant tissue for long time periods. Other *Phoenix* species may be susceptible to this fungus, including the Date Palm (*Phoenix dactylifera*), which is the palm currently growing on Cloverfield Blvd. (between Michigan & Colorado) as well as other palms of the *Phoenix* species. The disease may also be affecting the California Fan Palm as well. There is no cure for *Fusarium*. Fungicides have been evaluated for their effectiveness, but none has been successful.

Disease management is based solely on prevention and sanitation. One way the fungus is transmitted between locations is by infected plant material, including seeds. This is probably how the disease was first introduced into the southern California region.

When selecting Canary Island Date Palms in a nursery it is difficult to determine if they are actually disease-free at the time they are being selected, unless they are displaying the symptoms of *Fusarium*. A palm can also be infected but appear healthy because the disease may not have progressed to the point that symptoms are visible. There is no research indicating how long the disease has been in a tree before it begins to show the symptoms. Although it is possible to conduct a laboratory analysis of Canary Island Date Palms that are still in a nursery, testing can be costly and actually does not mean that they won't become infected once they are planted in the field. In fact, two Canary Island Date Palms that were planted as part of the Palisades Park renovation project in 1999 have since died from *Fusarium*.

In cases where the disease has become established in the landscape, it can also be transmitted from palm to palm via pruning equipment. Chain saws used to remove fronds from an infected Canary Island Date Palm will have fungal-infested sawdust and/or plant sap on the blades. If that equipment is not cleaned and disinfected, the next Canary Island Date Palm (or perhaps another species of Phoenix) pruned by this equipment will be exposed to this fungal-infested leaf material. The fungus can also be moved from palm to palm by pruning infected leaves that do not yet show symptoms of the disease. The current industry standard (as well as the City standard) is to prune Canary Island Date Palms with either new handsaws or handsaws which have been cleaned and disinfected with a bleach solution. This practice is now applied to *all* Canary Island Date Palms, diseased and healthy.

Tree Replacement Policy

Policy 1.5 of the City's adopted Community Forest Management Plan stipulates that the Community Forest be comprised of a diversity of tree species and varied ages within each species. It is the City's goal over time to achieve a Community Forest where no one species of tree dominates the forest and each species constitutes no more than 10% of the total forest. By retaining a few dominant species of palms in Palisades Park, the City runs the risk of losing more, perhaps eventually all of the Canary Island Date Palms to *Fusarium oxysporum* f. sp. *Canariensis*. Since 29% of the 1,000+ trees in Palisades Park are Canary Island Date Palms the introduction of a new species of palm to Palisades Park the City will help to avoid an epidemic of the disease which could severely impact the park.

In other cities such as Beverly Hills and Dana Point that have experienced the same problem the decision was made to replace *Fusarium* infected Canary Island Date Palms with a different species of tree. Beverly Hills has been replacing them in some sites with the Mexican Fan Palm (*Washingtonia robusta*) while in other sites they have not determined what the replacement species will be. Dana Point has moved away from planting palms by replacing them with broadleaf trees.

Palm Replacement Alternatives

Given that the Canary Island Date Palms should be replaced with a different species, staff identified species that are comparable in size, stature and growth habit. Although there are a variety of palms that will grow in the Santa Monica region, there are few that can match the stature and grandeur of the Canary Island Date Palm. Additionally there are limited choices in palms when it comes to nursery availability.

Some of the palms that were considered as possible replacements are listed as follows:

Species	Mature Height	Trunk Characteristics	Foliage	Nursery Availability	Estimated Costs
Blue Hesper Palm (<i>Brahea armata</i>)	Slow growth to 40'	Thick, with a swollen base grey color with a ringed	Blue, palm shaped fronds	Not readily available; more expensive than typical palms	\$250 per ft. for the tree + \$800 each to install
Sabal Palm (<i>Sabal palmetto</i>)	40'	Smooth grey appearance when the old palm boots are skinned off. Not as thick as the Date Palm	Dull green broad palm shaped fronds	Not readily in southern California, but possibly from the eastern US.	\$450 per ft. for the tree + \$700 each to install
Guadalupe Palm (<i>Brahea edulis</i>)	30'	Brown ringed appearance that's similar to the Date Palm but not as thick	Green broad palm shaped fronds	Available, but difficult to locate large quantities.	\$175 per ft. for the tree + \$700 each to install
Triangle Palm (<i>Neodypsis decaryi</i>)	25'	Dark grey with the boots of the old fronds holding tightly on three sides.	Blue green colored feather shaped fronds	Available, but getting difficult to locate quantities of larger specimens.	\$175 per ft. for the tree + \$700 each to install
Royal Palm (<i>Roystonea regia</i>).	60 – 80'	Smooth light grey color with close rings and a swollen base and mid-section	Bright green with feather shaped fronds	Readily available, but in smaller sizes only (8 – 10' is the typical size)	\$150 per ft. for the tree + \$700 each to install

The Royal Palm (*Roystonea regia*), which is resistant to *Fusarium*, can reach a mature height of 60 - 80 feet. It is fast growing and although tropical, it can thrive in southern California's sub - tropical climate. They have a massive light grey, smooth ringed and symmetrical trunk that is a little swollen at the base and in the mid-section huge. They have a bright green crown shaft and a crown of large feathery leaves. They produce small fruits similar to those of the Canary Island Date Palm. They grow in full sun prefer rich, well drained soil and can withstand short cold spells down to 20° F. The Royal Palm is often used in formal settings such as lining boulevards or to define an entryway to buildings or in an informal setting such as a park.

The following photos show mature Royal Palms (*left*) compared to the Date Palms (*right*).



The following photos show the approximate size of the specimens that would be planted as replacement trees in Palisades Park.



A comparison between the Canary Island Date Palm and the Royal Palm shows the similarities and differences in growth habit, stature, characteristics and cost.

Characteristics	Canary Island Date Palm	Royal Palm
Mature Height	40 – 60 feet	50 - 80 feet
Canopy spread	20 – 25 feet	20 – 25 feet
Canopy appearance	Symmetrical canopy with a regular (or smooth) outline, and individuals have more or less identical crown forms showy; spring flowering; winter flowering	Open airy appearance with thick broad fronds.
Foliage color	Dark green	Light green
Trunk appearance	Semi-rough texture with a dark brown color	Smooth texture with a grey color
Fruiting bodies	Produces small fruits year round	Produces small fruits year round
Pruning cycle	Every other year	Every three years
Habitat for urban wild life	Birds squirrels, rodents	Birds squirrels, rodents
Irrigation requirements	Little to none once it becomes established	Little to none once it becomes established
Diseases	Fusarium, Ganoderma butt rot, Theviliopsis	Ganoderma butt rot
Pests	palm leaf skeletonizer	Palm leaf skeletonizer, Royal Palm bug, Giant palm weevil, Scales when young. Typically not found in the southern California region.
Estimated cost per tree	\$400 per brown foot trunk	\$150 per brown foot trunk
Estimated planting costs	\$1,000 per tree	\$700 per tree

Alternatives

The following options are available:

1. Replace the dead and dying Canary Island Date Palms with the same species. However staff does not recommend this option for the reasons mentioned in this report.
2. Replace the dead and dying Canary Island Date Palms with the Royal Palm. This is the desired option for the reasons mentioned in this report.
3. Replace the dead and dying Canary Island Date Palms with a variety of palms and replace the remaining Canary Island Date Palms with other species of palms as they die off.
4. Replace the dead and dying Canary Island Date Palms with broadleaf trees and replace the remaining Canary Island Date Palms with broadleaf trees as they die off.

Fiscal Impact

Although this is not staff's recommendation, if the dead and declining Canary Island Date Palms were to be replaced with the same species, the cost would be considerably higher. The cost to purchase and plant a Canary Island Date Palm with 8' of brown trunk is estimated to cost \$4,200 per tree. The estimated cost to replace all 44 trees with Canary Island Date Palms is \$184,800. It must be noted that using the Canary Island Date Palm as a replacement tree does not insure the continuation of the current look of the park as the potential of losing all of the Canary Island Date Palms will always be present.

The cost to purchase and plant a Royal Palm with 8' of brown trunk is estimated to cost \$1,900 per tree. The estimated cost to replace all 44 trees with Royal Palms is \$119,400.

Page 5 of the report provides a summary of the cost of individual palm trees. If the dead and declining Canary Island Date Palms were to be replaced with a variety of palms the cost would be comparable to the cost of using the Royal Palm as the replacement, however the overall look of the park would change significantly.

If the dead and declining Canary Island Date Palms were to be replaced with a variety of broadleaf trees, the cost to purchase and plant a 48" box size tree is estimated to cost \$1,800 per tree. A 48" box size broadleaf tree is typically 15' high with a canopy spread of 7 – 8' and a trunk caliper of approximately 3 – 5 inches depending on the species. The estimated cost to replace all 44 trees with broadleaf trees is \$79,200. However this approach would dramatically change the overall look of the park.

Summary

Although other palms were considered as possible replacements, the only one that seems to match the stateliness of the Canary Island Date Palm and will retain the grand appearance of Palisades Park is the Royal Palm.

A second option is to replace the Canary Island Date Palm with a variety of palm species, eventually phasing out the Canary Island Date Palm as they die off over time. This would eventually change the overall appearance of Palisades Park; however the species diversity of the park would be dramatically increased.

A third option is to replace the Canary Island Date Palm with broadleaf trees. This approach would eventually change the overall appearance of Palisades Park as the Canary Island Date Palms die off and are replaced with broadleaf trees.

If Council wishes for further information or to hold discussion on this item, it can be placed on the next appropriate Council agenda. Staff anticipates the tree replacements to begin in the early fall.