

**Barrie Coate's Talk  
at the California Avenue Farmers' Market  
September 27, 2009**

Organized by an ad-hoc citizens' group  
Edited Transcription by Brent Barker

**Introductory Remarks**

- Please understand I am not representing anybody. I'm here to provide information, and if you have questions, I'd be happy to answer them as best I can. I don't have any preconceived interests in this.
- I realize you all feel pain and I think that is a compliment to Palo Alto. I can guarantee you that very few cities would have a turnout like this for a subject like this. I think that says something about Palo Altos.
- Palo Alto has had a wonderful street tree program for many years, and has on its staff some of the finest professionals of any city I know. You are living in a city that cares, as you care, about trees, and usually does things that are best for the street trees and you. I realize this does not represent what you believe is the best that could be done.

**On Holly Oaks**

- The species is highly variable – heterozygous. This means if you grow them from seed they are as variable as people are genetically. If you noticed, the size of the trees taken down along Cal Ave were different sizes, some were runts, some large. I have pictures of the street, taken on my own, that shows the variation.
- Some of the individual trees on Cal Ave were loaded with sooty mold. That's a black deposit usually on the top of branches and leaves because it falls from above. Sucking insects -- could be scale, aphids, whiteflies, whatever -- pull the fluids out of the tree to get the protein. So far as I know no one has found the insect that is causing this sooty mold. There has not been enough research to find the cause. If you look up Page Mill you will see some very large old Holly Oaks that look terrible because of the sooty mold. Nobody knows what is going on. It is not only happening here but in most of the cities I've visited in California. This is not an excuse for removing the trees that were here, but it is a factor in the life of Holly Oaks right now.
- Second, Holly Oaks are notorious for raising sidewalks. Not all oaks do this – live oak, valley oaks usually don't, but Holly Oaks do.
- Third, Holly Oaks drop huge quantities of seed, most of which germinate if you allow them.
- Today as a result of all this, Holly Oak is not usually planted as a street tree. It was on the selection list of city street trees in the 1950s and early 1960s, when I suppose these trees on California Avenue were planted, but no longer is under consideration.

**Selecting the Trees for Replanting**

- **Criteria.** We know a lot more today and have the information to make much better choices, but there are many factors to consider. I've put together a list of trees [see chart at the end of

this document] and some of the things to factor into your decision. This list is not intended as a recommendation, nor is it a comprehensive list of possibilities. I've simply put it together to show you the kind of criteria you go through in tree selection.

- **London Plane.** If you were to go through it [i.e. the chart], and give plus and minuses to the various factors – shade, longevity, growth rate, maintenance, etc – I can almost guarantee you that the one that will fall out the bottom of the list with the least problems and the most positive aspects would be the London Plane tree. You can do the exercise yourself, but that is what every city goes through, and is the primary reason the tree is so widely used.
- **Planting Space.** You need to provide enough planting space, and sufficient care of the root ball to ensure better health and longer life.
- **Shape and Canopy.** If I were choosing trees today, I would look for a tree with a larger canopy area than Holly Oak. Usually merchants like to have trees with the canopy above their signs, or below their signs. Selecting tree species and tree form will be important for people that have stores here.
- **Red Maple: Climate, Soil, Assurance.** If I were choosing the trees, I would not choose red maple. They are at best marginally suited for the climate in this area of mid California. They love Oregon and Washington; they love the moderate summer climates and colder winter climates. Some do very well here in Palo Alto, but if they are stressed in July, August, September, the leaves begin to look crispy by the end of summer.

Red maples also require acidic soil. If the soil conditions are not maintained, they become chlorotic, making the necrosis worse.

Red maples grow fast and are available in good quality in Oregon and they *might* work. But I would say for this replanting, “might” is not good enough. You better be darn sure they are going to work.

- **Broad Questions** There are plenty of other trees that would work. Most people start by saying “I like this tree.” That’s not a very good way to go. Better to start by asking broader questions, such as do I want an evergreen or deciduous tree? Deciduous gives you light in the winter. Where do you want them? You might want deciduous on one side the street and evergreen on the other. So location is another important factor.

**Coverage and the London Plane** You might want trees that almost cover the street, such as a London Plane tree. There are different cultivars of London plane trees, some good, some not so good. The ones planted in the 1950s will have anthracnose every spring, knocking all the leaves off. The new London planes are resistant to mildew, anthracnose, and somewhat resistant to sycamore scale. London plane trees are the most widely planted city trees in the world and for good reason – they meet a wide variety of criteria.

**Smaller Tree, Chinese Pistache** If you want smaller trees, you might drive through downtown Los Altos. Their tree of choice is Chinese Pistache, but you might want to be cautious. They are susceptible to verticillium wilt, a vascular disease that plugs up the vascular bundles. It kills the branches and eventually kills the tree. It was not a problem in Chinese Pistache until about 5 years ago. It’s not a major problem yet, but I suppose it could become one.

- **Lot of factors.** Anyway, there are a lot of factors more than just “I like this tree.” All of those factors should be considered by yourselves, the city, and all those with a stake in the future of Cal Ave.

### **Monoculture versus a Mix of Trees**

- Most city planners and arborists like uniformity up and down the street. I was literally thrown out of a planning meeting at the city of Alameda because I suggested changing species along the street.
- The danger of planting all one species, or worse a cultivar with a single set of genetic characteristics, is its susceptibility to disease over a period of time.
- The official recommendation from the International Society of Horticulture is not more than 10% of one subspecies in the planting. This doesn't mean different trees down the line, from tree to tree to tree. You could have five trees of one species, then five trees of a different species, and so on. Say you like ash trees, you could plant American Ash in one area, then Green Ash in another, and so on. Most people will read those as all the same tree, but they would be genetically different.

### **Q&A Portion of the Presentation**

#### **Are there native trees you would recommend?**

- Certainly Coast Live Oak is a good bet. It's indigenous to this area. Valley Oak is another good bet; it is one of the trees that was here before we were.
- I would not recommend California Bay. It has aphids that drip all over everything.
- I would not recommend Large Maple --Acer macrophylla -- as street tree. It has brittle limbs as it matures.
- So there are not many natives to recommend.
- Catalina Ironwood may be good, but of course it is native to Catalina Island, not here.

#### **What can we plant that we can enjoy in our lifetime, not just that of our kids'?**

- The easiest answer to that is to purchase large specimens. With the care the City of Palo Alto gives to its trees, it's possible.
- Money is one of the key issues, not just the cost of planting larger trees, but the care and maintenance. The root ball must not dry during the establishment period. If you had a 30-inch root ball, you might need to water three times a week to supply the bottom roots, and do that for three years. The only way this tree can survive it is to let the roots grow far enough beyond the root ball to where it can support itself and supply all of the trees needs.
- So the question of how long do you have to care for it is like that of a child – until it can take care of itself. Until it has a sufficient system to support itself, you have to care for it like it was a baby.

- Larger trees can certainly work. It just means you have to recognize the responsibility of care, and the cost of maintenance over a long period.
- Do I have dollar figures for the cost of smaller versus larger trees? No, it would only get me into trouble. Too many factors. Remember, the city can purchase trees for a lot less than you can.

### **What about faster growing trees?**

- In general, the faster the growth rate, the more pruning that's required, and in some cases the shorter the life.
- That is not always true; a good example of an exception is the London plane tree –which is both fast growing and long-lived.

### **What about flowering pear?**

- The answer is don't fall into that trap. This tree is used all over the U.S. It is an example of a tree that has been so badly overused that two species of disease have adapted themselves. It has become easy for the disease to move down the street, from block to block, and on to the next county because there are so many of them.
- Old versions have had problems with weak branches and disease. I would say don't plant Bradford, Aristocrat, or Chanticleer, as they are all very susceptible to fire blight. New Bradford is more broad branching and may not be susceptible to fire blight.

### **What about trees that would attract wildlife – butterflies, hummingbirds, etc?**

- If you chose a variety of species, some of the trees could have those attributes.
- I don't have a specific recommendation for a tree with a tubular flower which butterflies like. But there a good variety of trees that can attract Hover Flies that are a good insect predator.

### **Are there trees that you can recommend for longevity?**

- That's an important factor. The table I've provided shows the longevity of each tree.
- Again the London Plane tree is one that has long life as well as many other good features. You might want to consider the Columbia cultivar. It would reach about 40-50 feet with a 30-35 (foot) canopy.

### **What about magnolias?**

- If you are talking about the Southern magnolia, the *Magnolia grandiflora*, I would suggest you ask the homeowners. They will tell you "I hate it." There are litter problems. They are filthy, wreck sidewalks, can't take root pruning.

### **Why is there only one evergreen on this list you handed out?**

- There are certainly other evergreens you could choose. I put this list together with the thought in mind of what might work on this street, not the balance of evergreen versus deciduous, and this one came to mind.

### **Could you address issues of safety, regarding acorns, wet leaves, etc?**

- Most cities don't like to talk about it, but acorns and old sycamore and liquid ambers have seedpods, which cause accidents and lawsuits.
- All trees drop leaves. Evergreens drop leaves all year long; deciduous over a finite period. I've not heard of lawsuits over wet leaves.
- Safety concerns are more likely to arise from branch structure.

### **What about oak trees?**

- All oak trees are going to drop acorns, and remain susceptible to the acorn weevil problem. The tree tries to plug the hole and ends up dripping fluids under the tree. This can be treated with systemic insecticide injected into the soil in January, but most cities don't like to plant something they know they are going to have to treat every year. This is added maintenance cost.
- Coast Live Oak and Valley Oak are both suitable street trees, but they do drop a lot of acorns, and the larger the tree, the more acorns they drop. The acorns on the Valley Oak are quite large.
- Red Oaks are highly variable in height, and branching patterns, real genetic dogs.
- Eastern Oaks are better, not as genetically diverse from tree to tree. Scarlet Oaks are good but they don't like to be transplanted.

### **Is there an optimum time to plant the street trees?**

- Absolutely, November 1<sup>st</sup>, plus or minus a few weeks. Same for almost everything in California.
- The soil has not cooled off so that you can still have good root growth at the very time there is very low demand by the foliage.



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Important Character										Cultural Preference				Preferred Soil Type				Suitable Planter Space			Facing which Way					
Deciduous	Evergreen	Flowers, Color	Flowering Period	Fruit	Fruiting Period	Fall Color	Height & Spread at Maturity	Growth Rate F-A-S	Amount of Debris	Under Power Lines?	How Often is Pruning Needed?	Sun	Part Shade	Good Drainage	Irrigation	Clay Loam	Heavy Clay	Gravelly Clay, Dense Subsoil	Alkaline Clay, Bay Front	3 Feet	5 Feet	8 Feet	Open	Turf	N & E (north & east)	S & W (south & west)

<i>Pistacia chinensis</i> 'Keith Davey'	✓				✓	F	R	25	20	M	M	Y	3yr	✓						✓	✓						N&E
Chinese Pistachio	Currently overused, brilliant fall color, nondestructive roots																										
<i>Platanus acerifolia</i> 'Columbia'	✓					Φ	50	40	F	L	N	Φ	✓			✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	Any
Columbia London plane	Moderately disease resistant, oval upright habit, few pests																										
<i>Pyrus calleryana</i> 'New Bradford'	✓		W	S			R	35	20	F	L	N	5yr	✓	✓					✓	✓	✓	✓	✓	✓	✓	Any
Holmford Flowering Pear	Evenly branched, well formed pear. Little pruning is needed.																										
<i>Quercus shumardii</i>	✓				✓	F	R	50	40	M	L	N	5yr	✓	✓		✓			✓	✓			✓	✓	✓	N&E
Shumard Oak	Pyramidal, strong leader. The best of the eastern oaks.																										
<i>Tilia tomentosa</i> 'Sterling'	✓		W	Sp			Y	45	35	F	M	N	Φ	✓			✓			✓	✓			✓	✓	✓	N&E
Sterling Silver Linden	Large leaves silver on underside, very well formed, pyramidal																										
<i>Ulmus parvifolia</i> 'Allee'	✓						Y	50	35	F	M	N	5yr	✓						✓	✓			✓	✓	✓	N&E
Allee Chinese Elm	A large carefree elm, DED resistant, small foliage.																										

