Agenda
Sustainability Task Force

A Committee of the Chico City Council

Meeting of Thursday, December 14, 2017 – 5:30 p.m.
Municipal Center - 421 Main Street, Conference Room No. 1 in the Council Chambers

1. **CALL TO ORDER AND ROLL CALL**

2. **APPROVE NOVEMBER 9, 2017 MEETING MINUTES**

   Draft 11/09/17 minutes attached.

3. **STATUS UPDATE REGARDING IMPLEMENTATION OF THE CITY'S WASTE FRANCHISE AGREEMENT (Linda Herman/City of Chico, Becky Holden/Recology, and Kim Fleming/Waste Management) –** The STF will receive an update regarding implementation of the City's Waste Franchise Agreement from City staff and representatives from Recology and Waste Management.

4. **2017/18 CIVICSPARK INITIATIVE: UPDATE (CivicSpark Member Marcussen) –** The STF will receive its regular update regarding the effort to develop long-term strategies for mitigating anticipated local impacts of climate change.

5. **2018 SUSTAINABILITY TASK FORCE MEETING SCHEDULE (Deputy Director Vieg) –** *Attached is a proposed meeting schedule for 2018*.

6. **REPORTS & COMMUNICATIONS** - These items are provided for the STF's information. Although the STF may discuss the items, no action can be taken at the meeting. Should the STF determine that action is required, an item may be included on a subsequent agenda.

7. **BUSINESS FROM THE FLOOR** - Members of the public may address the STF at this time on any matter not already listed on the agenda, with comments being limited to three minutes. The STF cannot take any action at this meeting on requests made under this section of the agenda.

8. **ADJOURNMENT** - Next meeting scheduled for *(2018 Meeting Schedule TBD)*

ATTACHMENT(S): 11/09/17 STF Meeting Minutes (Draft)
Proposed 2018 STF Meeting Schedule

Agenda available from the City's website at www.ci.chico.ca.us.under ***"Meetings/Agendas"***

Prepared: *12/06/17*
Posted: *12/06/17*
Prior to: 5:30 pm

Community Development Department
421 Main Street, 2nd Floor, Chico, CA 95928
(530) 879-6800

Please contact the City Clerk at 896-7250 should you require an agenda in an alternative format or if you need to request a disability-related modification or accommodation in order to participate in a meeting. This request should be received at least three working days prior to the meeting in order to accommodate your request.

Sustainability Task Force Members:

Cheri Chastain, Vice Chair
Dave Donnan
William Loker
Lucas RossMerz
Mark Stemen, Chair

CITY OF CHICO SUSTAINABILITY TASK FORCE
MINUTES OF THE MEETING OF
NOVEMBER 9, 2017

Municipal Center
421 Main Street
Council Chambers, Conference Rm. 1

STF Members Present:	Mark Stemen, Chair Dave Donnan William Loker Lucas RossMerz
STF Members Absent:	Cheri Chastain, Vice Chair
Staff Members Present:	Brendan Vieg, Deputy Director Molly Marcussen, CivicSpark Fellow Richie Bamlet, Urban Forester
Guests Present:	Charles Withuhn, Chico Tree Advocates Linda Storey Jessica Shippen Angela Casler Robin McCollum

1. CALL TO ORDER

Chair Stemen called the meeting to order at 5:32 pm. STF members, City staff, and guests were present as noted.

2. APPROVE SEPTEMBER 14, 2017 MEETING MINUTES

The 09/14/17 STF Meeting Minutes were approved 4-0.

3. DISCUSSION OF CHICO'S URBAN FOREST AND ITS ROLE IN ADDRESSING CLIMATE CHANGE

Charles Withuhn (Chico Tree Advocates) and Chico Urban Forester Richie Bamlet provided updates on ongoing and future efforts to improve the health of Chico's urban forest, the importance of trees in reducing greenhouse gases, and how a shaded community is adaptive and resilient to warming temperatures (**see attachment for details regarding presentations**).

The following topics were discussed after each presentation:

Richie Bamlet – Chico's Urban Forester

- Differences between using private contract tree crews and City street crews
- City funding for maintaining Chico's urban forest
- Benefits of different tree species for carbon sequestration
- The importance of diverse species and age for a healthy forest

Charles Withuhn (Chico Tree Advocates)

- Signature trees are being removed from Chico's urban forest
- The biggest threats to our climate are burning coal, burning gas, and cutting down trees
- There have been more trees removed than planted in Chico the last 8 years
- The role a healthy growing urban forest in providing for community safety (Chico City Council's number one priority)
- Trees provide shade which provides resiliency from increased heat caused from climate change
- Shade from trees reduces the need for pavement maintenance
- Without proper maintenance of the urban forest there is significant liability to the City – City Council needs to fund tree crews
- There are 3,000 empty street tree planting sites in the City
- The benefits of a tree nursery in Bidwell Park for "home-grown" trees
- Discussion regarding a coordinated effort between the City's Parks Division and Chico Tree Advocates in identifying a master tree planting list and working towards a "ready to go" planting effort
- Discussion of the status of PG&E money the City received when PG&E removed a number of trees

4. 2017/18 CIVICSPARK INITIATIVE: CLIMATE ADAPTATION

CivicSpark Fellow Marcussen provided the STF with an update regarding the effort to develop long-term strategies for mitigating anticipated local impacts of climate change. Marcussen is coordinating with CSU, Chico, and City and Butte County staff, in the development of a Draft Climate Change Vulnerability Assessment that identifies risks climate change poses to the community, and will also prepare draft adaptation and resiliency goals, policies, and objectives.

5. REPORTS & COMMUNICATIONS

Deputy Director Vieg shared that BCAG has initiated development of the Butte Plug-In Electric Vehicle (PEV) Readiness Plan, and that he and other city and county staff, as well as interested

stakeholders, are participating in the effort. The Plan will make the region eligible for grant funding, and help meet GHG emission reduction targets

6. BUSINESS FROM THE FLOOR

CSUC student Jessica Shippen asked questions of the STF regarding renewable energy incentives, the community's energy grid mix, and the role the City plays in those efforts.

Linda Story, owner of Hula's Chinese BBQ, shared that her business recently went strawless, and she wants to challenge other Chico businesses to do the same. Seattle went strawless for 3 months and called in "Strawless in Seattle". She would like for Chico to go strawless for a month. She asked the STF for advice and to partner together. The STF is interested and suggested she reach out to businesses like Klean Kanteen, Sierra Nevada, etc., and also look to the CN&R to run a story.

7. ADJOURNMENT

There being no further business from the STF, the meeting adjourned at 6:55pm to the meeting of Thursday, December 14, 2017.

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Date Approved Brendan Vieg, Principal Planner

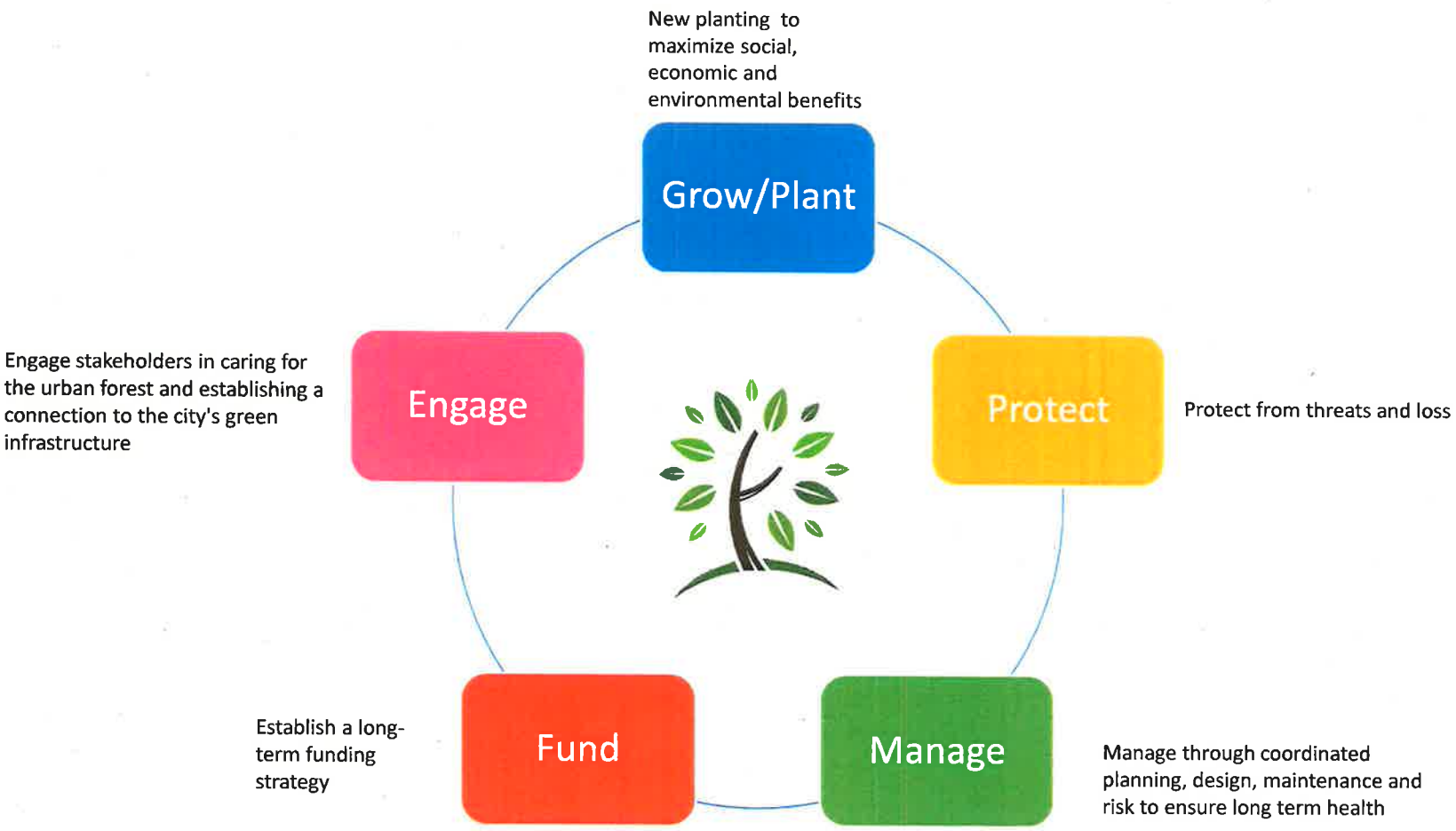
Sustainability Task force Meeting Date 11/9/2017

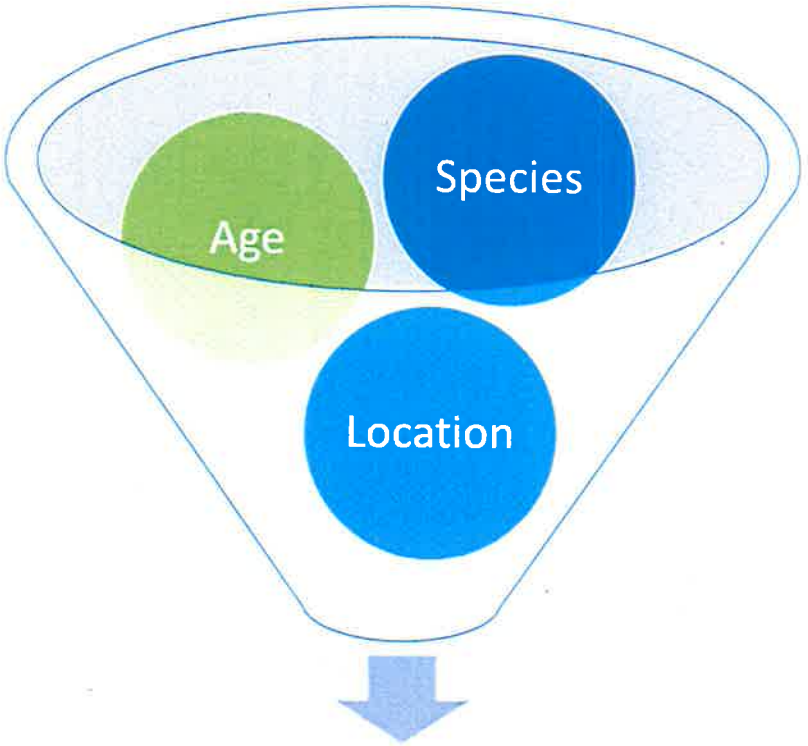
DATE: 11/9/2017

TO: Sustainability Task force

FROM: Urban Forest Manager

SUBJECT: DISCUSSION OF CHICO'S URBAN FOREST AND ITS ROLE IN ADDRESSING CLIMATE CHANGE


New planting to maximize social, economic and environmental benefits
Grow/Plant
Protect
Protect from threats and loss
Manage
Manage through coordinated planning, design, maintenance and risk to ensure long term health
Fund
Establish a long-term funding strategy
Engage
Engage stakeholders in caring for the urban forest and establishing a connection to the city's green infrastructure



Diverse Urban Forest !

Canopy coverage analysis

City	Tree	Date	Method/Source
Atlanta, GA	36.7	1998	UFORE/USFS
Austin, TX	34	early 1990s	Regional Ecosystem Analysis/American Forests
Houston, TX metro area	30		Regional Ecosystem Analysis/American Forests
Boston, MA	29	2005	Flyover–USFS
Dallas, TX	28		UC Davis–USFS
National average	***27.1***	***2004***	***UFORE/USFS***
Atlanta, GA	27	early 1990s	Regional Ecosystem Analysis/American Forests
Syracuse, NY	26.6	1999	UFORE/USFS
Seattle, WA	25	early 1990s	Uncertain estimate
Baltimore, MD	25	early 1990s	Regional Ecosystem Analysis/American Forests
New York City, NY	24	2005	Satellite imagery–USFS
Boston, MA	22.3	1998	UFORE/USFS
Boston, MA	29	2006	Satellite imagery–USFS
Baltimore, MD	21	1998	UFORE/USFS
New York City, NY	20.9	1998	UFORE/USFS
Los Angeles, CA	18		UC Davis–USFS
Philadelphia, PA	15.7	1998	UFORE/USFS
San Francisco, CA	12		UC Davis–USFS
Jersey City, NJ	11.5	1998	UFORE/USFS
Milwaukee, WI	11	early 1990s	Regional Ecosystem Analysis/American Forests
Chicago, IL	11	1991	uncertain/USFS
Miami Dade County	10	early 1990s	Regional Ecosystem Analysis/American Forests

How does Chico fare ???

Chico Urban Forest Management

i-Tree Canopy v6.1

Percent Cover (±SE)

Define the Urban Forest?

How do we measure it?

Is the Urban Forest Diverse?

Is the Urban Forest resilient?

Sample data point- tree!

Cover Class	Description	Abbr.	Points	% Cover
Tree	Tree, non-shrub	T	152	30.4 ±2.06
Non-Tree	All other pervious surfaces	NT	121	24.2 ±1.92
building	Roof	bld	77	15.4 ±1.61
road/parking	Blacktop	rpk	147	29.4 ±2.04
riparian	Water channel lakes and ponds	rip	3	0.60 ±0.35
			500	

Species Diversity Recommendations	
Author	**Diversity Reccomendations**
Barker (1975)	No single species should make up more than 5% of the total species richness
Miller and Miller (1991); Smiley, Kielbaso and Proffer (1986)	No species shall exceed 10% of the population
Moll (1989)	No species should exceed 5% and no genus should exceed 10%
Santamour, F.S. (1990)	Plant no more than 10% of any species, no more than 20% of any genus and no more than 30% of any family.
Ball, J (2016) Forestry Prof South Dakota State Uni	No More than 5% of the urban forest from any one **genus**

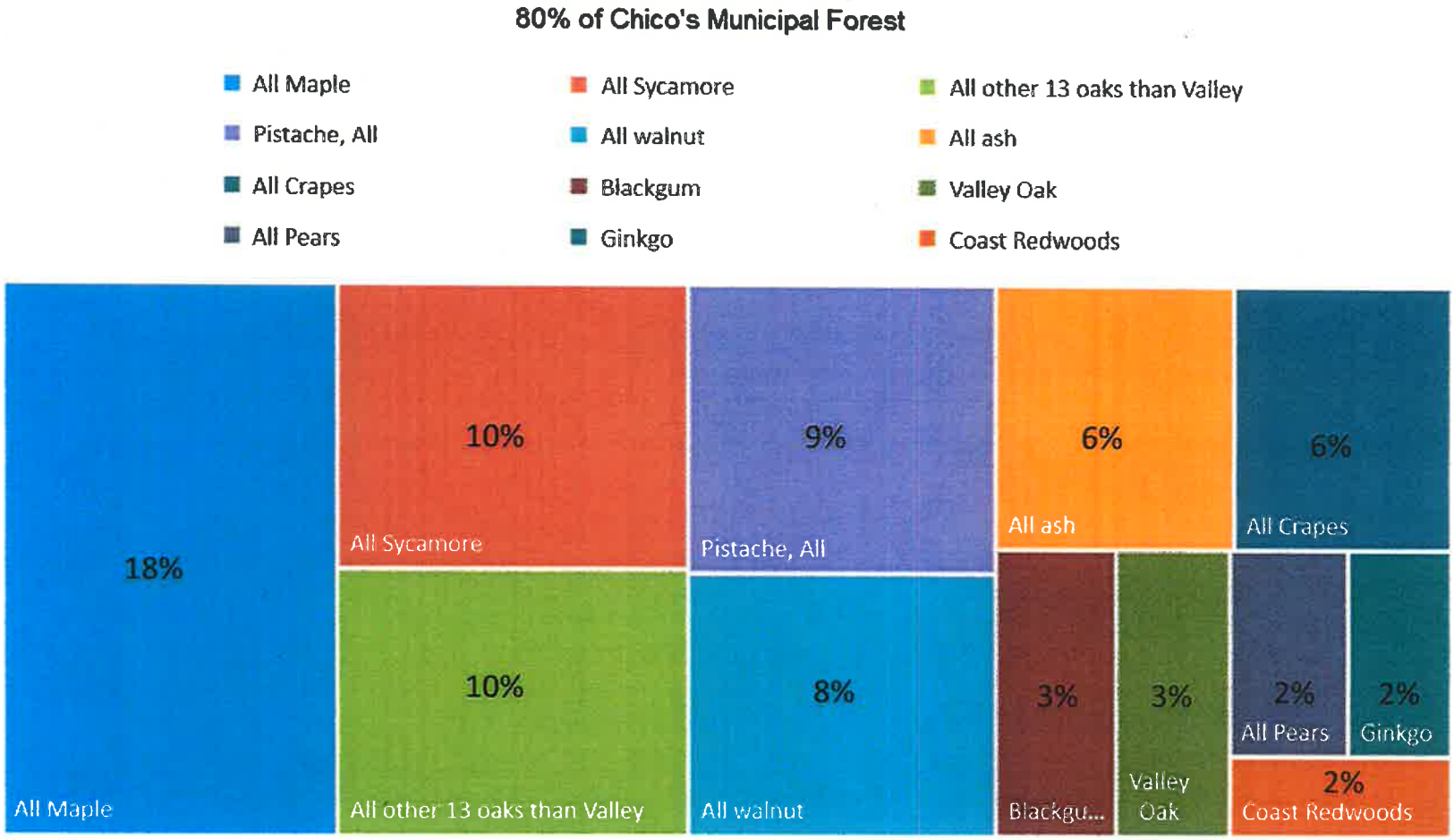
Citations:

Barker, P.A. 1975. Ordinance control of street trees. Journal of Arboriculture. 1(11):212-215.

Moll, G. 1989. Improving the health of the urban forest. Pp. 119-130. In Moll, G. and S. Ebenreck (eds.). Shading our Cities: A Resource Guide for Urban and Community Forests. Island Press. Washington, D.C

Miller, R.H., and R.W. Miller. 1991. Planting survival of selected street tree taxa. Journal of Arboriculture. 17(7):185-191.

Santamour, F.S. 1990. Trees for urban planting: diversity, uniformity, and common Sense. Proceedings of the 7th Conference of the Metropolitan Tree Improvement Alliance. 7:57-65.


80% of Chico's Municipal Forest
All Maple
All Sycamore
All other 13 oaks than Valley
Pistache, All
All walnut
All ash
All Crapes
Blackgum
Valley Oak
All Pears
Ginkgo
Coast Redwoods
18%
All Maple
10%
All Sycamore
10%
All other 13 oaks than Valley
9%
Pistache, All
8%
All walnut
6%
All ash
6%
All Crapes
3%
Blackgu...
3%
Valley Oak
2%
All Pears
2%
Ginkgo
2%
Coast Redwoods

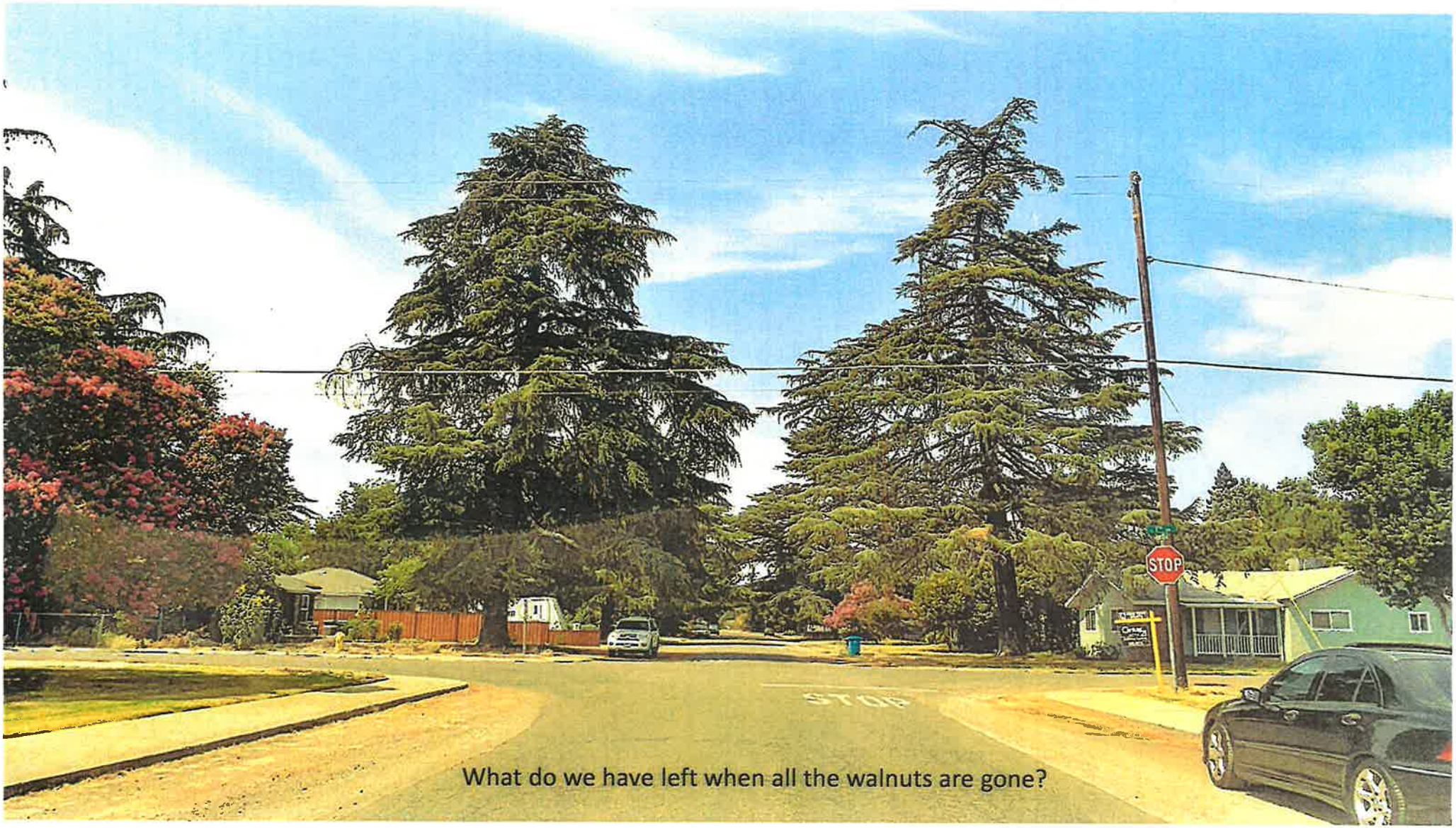
Right Tree Right Place- What are we trying to achieve?

Private residential- Lovely Crapes

A random house in Calpark

Municipal - A wasted opportunity

Penzance ave



What do we have left when all the walnuts are gone?

The forgotten and unloved

Kentucky coffee tree Laburnum Ave

32	Horsechestnut, Red
30	Pine, Canary Island
50	Arborvitae
126	Cedar, Atlas and Deodar
11	Redbud, Forest Pansy
6	Pine, Ponderosa
6	Kentucky Coffee Tree
4	Pine, Gray

Climate-Ready Trees for Central Valley Cities:

Trial Planting Map on Hutchison Road, Davis, CA

University of California, Davis
and
Pacific Southwest Research Station
USDA Forest Service

Tree Cultivars:

Mulga	*Arrenia amoena*	
Netleaf Hackberry	*Celtis reticulata*	
Desert Willow	*Chilopsis linearis* 'Bubba'	
Texas Ebony	*Ebenopsis ebano*	
Ghost Gum	*Eucalyptus papuana*	
Shoestring Acacia	*Acacia stenophylla*	
White Shield Osage Orange	*Maclura pomifera* 'White Shield'	
Desert Museum Palo Verde	*Parkinsonia* x 'Desert Museum'	
Rosewood	*Vitex agnus-castus*	
Thornless Honey Mesquite	*Prosopis glandulosa* x *Maverick*	
Canby's Oak	*Quercus canbyi*	
Emerald Sunshine Elm	*Ulmus propinqua*	

Dimensions and Layout:

Four rows running north to south with 12 trees in each row. 150 ft. x 350 ft. Approximately 25 ft. x 25 ft. per tree

Selecting Trees to Maximize Future Carbon Dioxide and Rainfall Interception Storage Benefits

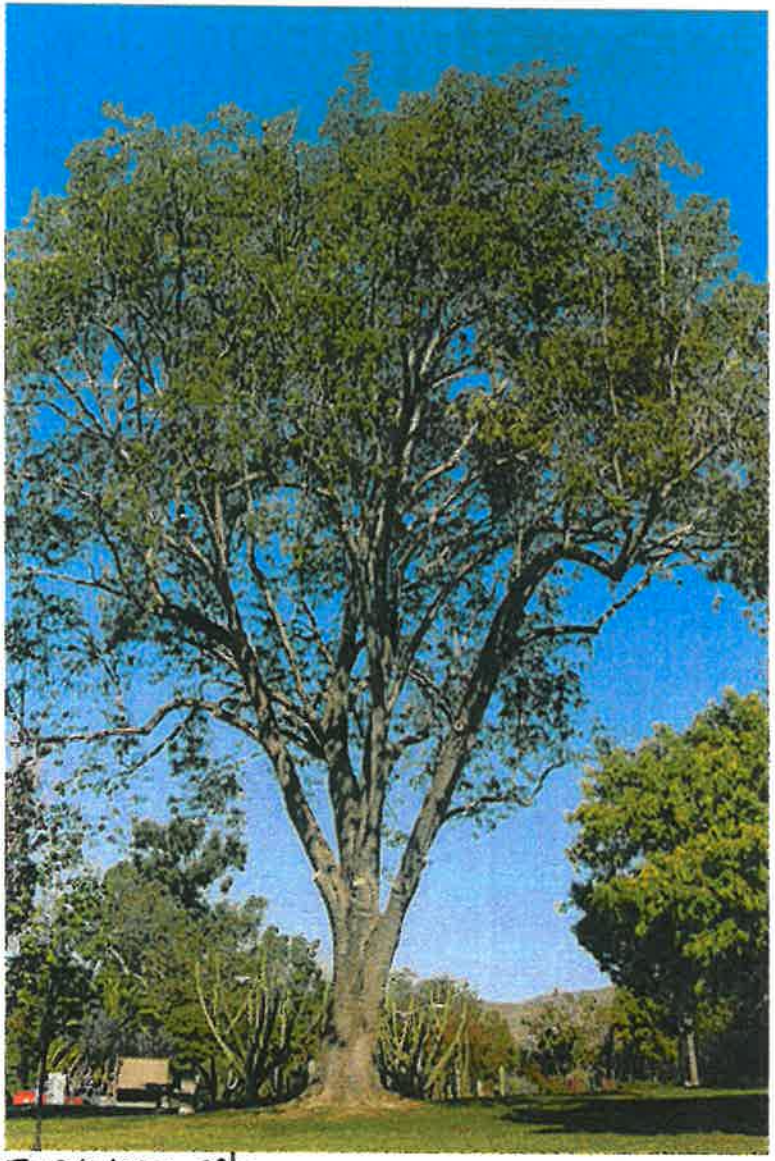
Greg McPherson, USDA Forest Service, PSW, Davis, CA. 2017

Carbon dioxide stored per tree at each 5-year interval for 40 years (kg).

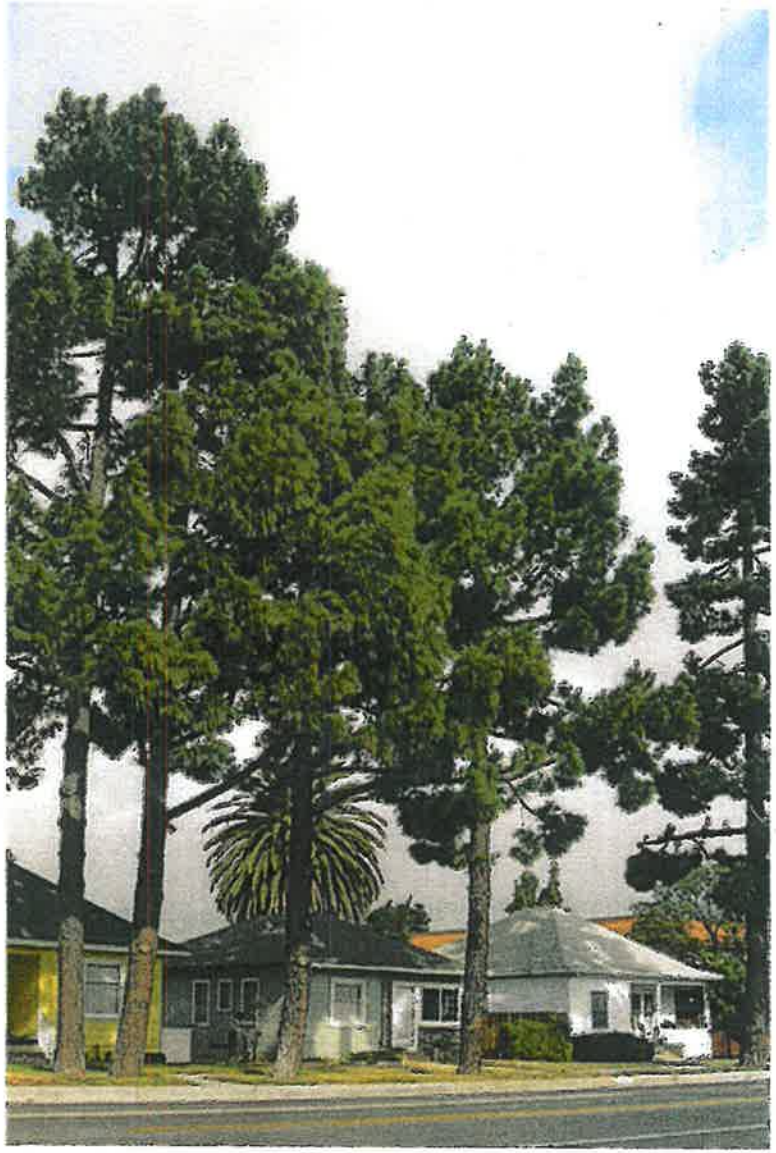
Growth/ Size	Botanical Name	5	10	15	20	25	30	35	40	DW Density (kg/m3)
	Celtis sinensis	217	665	1,201	1,749	2,278	2,780	3,267	3,761	490
	Quercus ilex	28	127	331	674	1,188	1,906	2,858	4,075	820
	Pinus canariensis	62	305	754	1,444	2,483	4,074	6,483	9,722	610
	Fraxinus angustifolia	34	109	223	367	531	706	880	1,046	510
	Gleditsia triacanthos	77	238	502	880	1,378	2,004	2,764	3,661	600
	Picea pungens	16	74	179	330	523	756	1,026	1,332	360
	Eucalyptus globulus	87	463	1,238	2,442	4,058	6,044	8,350	10,923	620
	Fraxinus uhdei	173	927	2,097	3,530	5,136	6,864	8,680	10,559	510
	Ginkgo biloba	48	203	459	793	1,178	1,595	2,030	2,474	520
	Lagerstroemia indica	38	104	187	278	370	460	551	647	571
	Liquidambar styraciflua	51	193	445	813	1,287	1,854	2,497	3,195	460
	Pistacia chinensis	48	250	580	998	1,477	1,997	2,546	3,115	685
	Platanus x acerifolia	38	145	346	654	1,078	1,620	2,281	3,059	500
	Pyrus calleryana	250	469	870	1,292	1,718	2,142	2,558	2,966	600
	Quercus lobata	46	181	408	716	1,095	1,528	2,002	2,505	550
	Zelkova serrata	45	231	620	1,250	2,142	3,300	4,717	6,375	520
	Cinnamomum camphora	60	244	586	1,102	1,793	2,652	3,663	4,808	520
	Magnolia grandiflora	25	138	320	545	801	1,077	1,369	1,672	460
	Sequoia sempervirens	34	256	818	1,838	3,416	5,623	8,513	12,114	380
	Pinus pinea	22	103	280	589	1,062	1,734	2,635	3,799	500

Potential rainfall stored per tree at each 5-year interval for 40 years (gals).

Leaf Area 40 Yrs. (m2)	CommonName	5	10	15	20	25	30	35	40	Sur. Stor. Cap. (mm)
426	Chinese hackberry	9	27	45	62	77	90	102	114	0.71
608	holly oak	6	14	25	39	57	79	104	132	0.82
748	Canary Island pine	8	24	43	63	86	114	149	196	0.99
241	Raywood ash	1	4	10	18	27	36	45	54	0.6
303	honeylocust	1	4	9	16	26	38	52	67	0.67
409	blue spruce	14	39	67	95	123	149	173	196	1.81
681	blue gum eucalyptus	12	29	46	63	80	96	111	126	0.7
809	evergreen ash	9	33	59	83	106	128	148	167	0.78
269	ginkgo	3	10	18	26	34	42	50	57	0.64
107	crapemyrtle	3	5	8	10	12	14	15	17	0.59
659	sweetgum	20	49	81	113	145	175	203	229	0.95
577	Chinese pistache	19	59	98	133	164	193	220	244	1.17
630	London planetree	15	37	62	90	118	147	175	203	0.87
432	Callery pear	13	27	39	49	57	64	71	76	0.51
539	valley oak	12	35	61	87	114	139	163	186	0.91
1,172	Japanese zelkova	12	44	87	136	189	242	296	349	0.84
538	camphor tree	6	18	33	48	64	81	97	112	0.79
242	southern magnolia	3	11	19	27	34	40	46	52	0.81
757	coast redwood	10	28	53	83	117	154	193	232	1.16
704	Italian stone pine	4	12	27	48	75	109	148	193	1.04

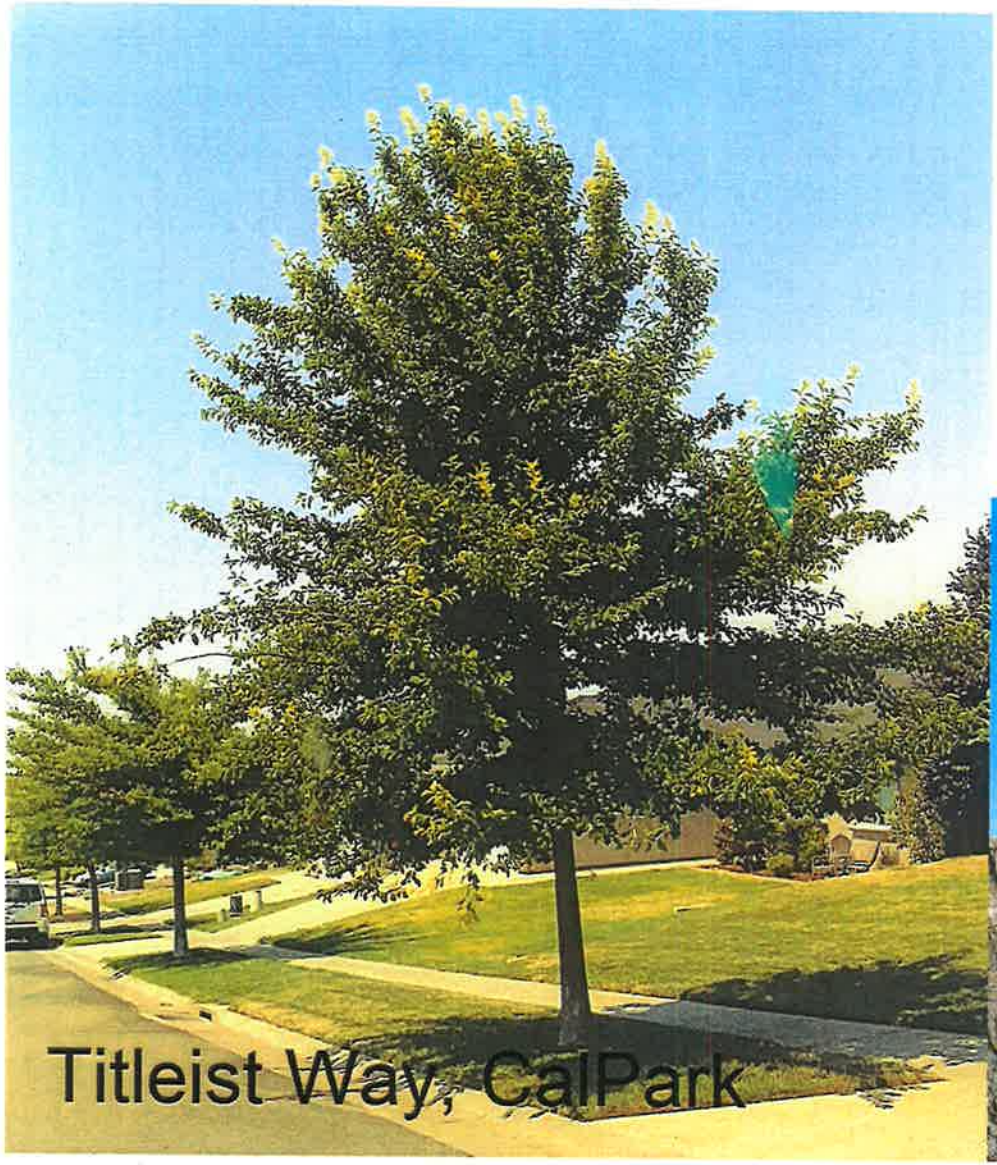


Evergreen ash
- 10559 lbs CO_2 stored (WUCOLS - medium)
compare to:
London plane
- 3059 lbs CO_2 stored (WUCOLS - medium)



Canary Island pine (WUCOLS - medium)
- 9722 lbs of CO_2 stored
compare to:
Coast redwood - 12114 lbs CO_2 WUCOLS - High

California black oak has no strict soil texture preference. Soil textures supporting California black oak range from sandy loams to gravelly clay loams
Maximum growth rates are attained on deep, well-drained, slightly acid loams and clay loams California black oak tolerates shallow, rocky soils, but tends toward a shrubby form, or is less frequent, on such sites [147]. California black oak grows on diverse parent materials including granite, basalt, and sandstone



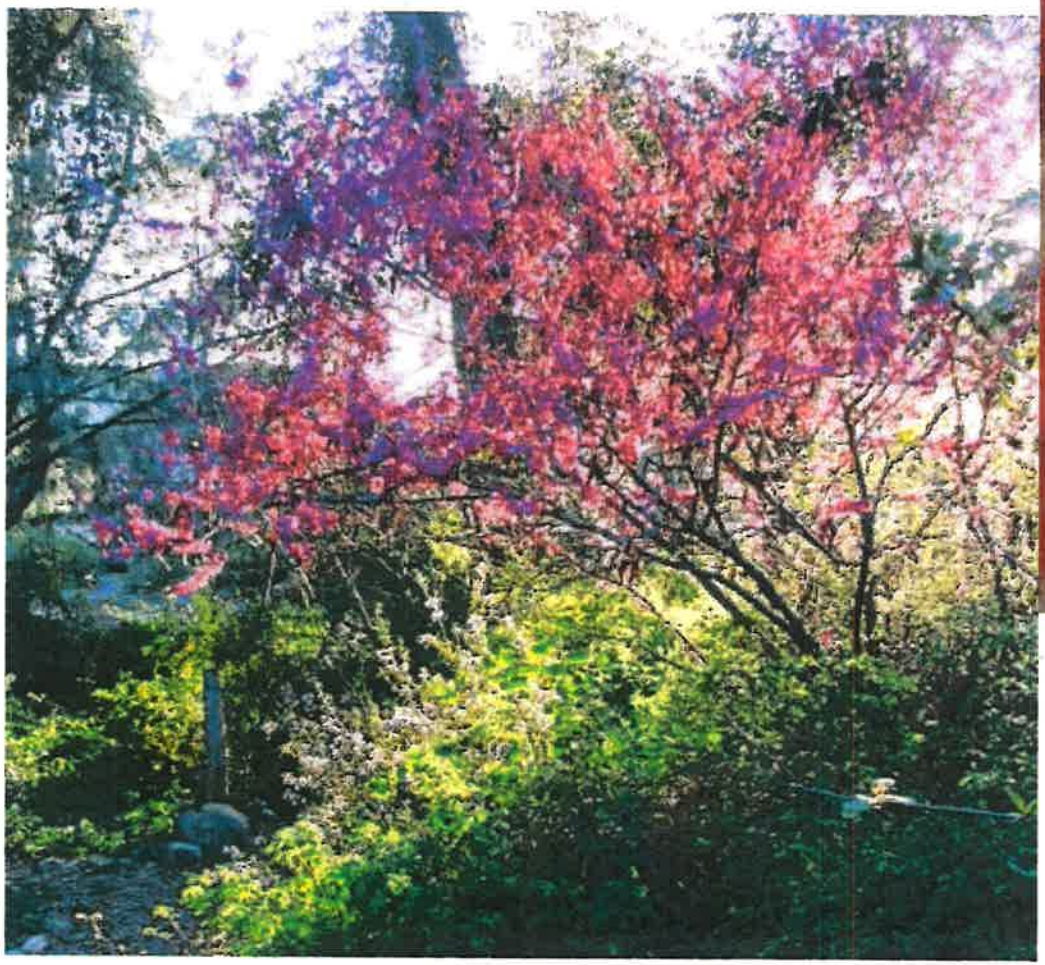
California black oak
Quercus kelloggii

Black Tupelo
Nyssa-sylvatica

Chitalpa
Tashkentensis
...Its on the list

Spring Flurry serviceberry
Amelanchier laevis
...Its on our approved list

Western Redbud
Cercis occidentalis



Proposed 2018 STF Meeting Schedule

Thursday, January 25th @ 5:30pm in CR 1

Thursday, February 22nd @ 5:30pm in CR 1

Thursday, April 12th @ 5:30pm in CR 1

Thursday, May 24th @ 5:30pm in CR 1

Thursday, July 12th @ 5:30pm in CR 1

Thursday, August 23rd @ 5:30pm in CR 1

Thursday, October 11th @ 5:30pm in CR 1

Thursday, November 22nd @ 5:30pm in CR 1