ACORN
ARBORICULTURAL SERVICES INC.

ARBORIST REPORT / INVENTORY

McCuen Properties LLC
3610 American River Dr., Suite 190
Sacramento, CA 95864

March 7, 2019

Attn: David Nystrom

Re: University Research Park Project Site, Davis CA

INTRODUCTION

This Report/Inventory covers the trees located on and within 15 feet of the above referenced site along Research Park Drive in Davis. Any tree 5 inches in diameter at breast height (DBH) or larger is included in this report. This is to satisfy the requirements for a discretionary permit outlined in Chapter 37 of The Davis Municipal Code.

SCOPE OF THE REPORT

The focus of this report is to inventory the trees, listing the species, size measurements, current condition, notable characteristics, identify encroachments, and provide recommendations. These trees have been identified with numbered metal tags and the numbers listed adjacent to the tree locations on a copy of the site plan (see attachment).

METHODOLOGY

The tree number and species were recorded, diameter measured at breast height (DBH), along with dripline radius (DLR). The trees were visually assessed from the ground and given a conditional rating. Utilizing this data, the tree's overall structure and vigor were assessed, ranging from 'poor' to 'good' based upon the observed characteristics noted within the tree and the Arborist's best professional judgment. The vigor rating considers factors such as the size, color, and density of the foliage; the amount of deadwood within the canopy; bud viability; evidence of wound closure; and the presence or evidence of stress, disease, nutrient deficiency and insect infestation. The structure rating reflects the root crown/collar, trunk and branch configurations; canopy balance; the presence of included bark, weak crotches, decay, and other structural defects plus the potential for failure. General notable characteristics pertinent to the tree's structure and vigor were documented.

Following is the tree data, encroachments and recommendations:

TREE DATA

TREE #	SPECIES	SCIENTIFIC NAME	DBH inch	DLR feet	STRUC -TURE	VIGOR	NOTABLE CHARACTERISTICS
1	crabapple	*Malus* sp.	11	14	poor to fair	poor to fair	leans slightly southwest, above average amount of deadwood, callusing trunk wound
2	crabapple	*Malus* sp.	12	19	fair	fair	leans slightly south, unbalanced south
3	deodar cedar	*Cedrus deodara*	22	27	poor to fair	fair	topped for utility line clearance
4	buckeye	*Aesculus* sp.	7,7	15	fair	fair	none
5	buckeye	*Aesculus* sp.	7,8	11	fair	fair	none
6	coast redwood	*Sequoia sempervirens*	26	15	fair	fair	none
7	coast redwood	*Sequoia sempervirens*	22	16	fair	fair	none
8	coast redwood	*Sequoia sempervirens*	17	14	fair	fair	none
9	coast redwood	*Sequoia sempervirens*	23	16	fair	fair	none
10	coast redwood	*Sequoia sempervirens*	19	14	fair	fair	none
11	coast redwood	*Sequoia sempervirens*	24	18	fair	poor to fair	thinning and browning foliage, suspected canker infection
12	coast redwood	*Sequoia sempervirens*	18	14	fair	fair	none
13	holly oak	*Quercus ilex*	13	20	fair	fair	low branching
14	holly oak	*Quercus ilex*	20	25	fair	fair	low branching
15	holly oak	*Quercus ilex*	11	20	fair	fair	leans and bends east
16	holly oak	*Quercus ilex*	27	41	fair	good	low branching, easterly branches arc to grade
17	Chinese elm	*Ulmus parvifolia*	9,9	21	fair	fair	westerly 8-inch diameter stem recently removed
18	Chinese hackberry	*Celtis sinensis*	13	20	fair	fair	off-site to the east
19	Chinese hackberry	*Celtis sinensis*	15	20	fair	fair	just off-site to the east
20	Chinese hackberry	*Celtis sinensis*	16	24	fair	fair	none
21	Chinese hackberry	*Celtis sinensis*	13	19	fair	fair	none
22	Chinese hackberry	*Celtis sinensis*	18	24	fair	fair	none
23	Chinese hackberry	*Celtis sinensis*	16	19	fair	fair	none

Proposed removals due to construction conflicts

ENCROACHMENTS

Encroachments are defined as any activity conducted within the tree protection zone or drip line of a protected tree.

Removals:
Trees numbered 10, 11, and 12 due to site access driveway construction. Tree number 11 has thinning foliage with a suspected canker infection. Removal of this tree will help prevent the spread to the redwoods to be preserved.

Encroachments:
Trees numbered 3,8,9, and 15-23 will be impacted by the hardscape improvements associated with the parking and open space areas. Root pruning will be required to accommodate the grading necessary to establish sub grade for the hardscape. For trees numbered 13,15, 20 and 21 it is likely to be substantial depending upon the soil properties on-site.

Pruning:
Trees numbered 13,15 and 16 will require elevation pruning to provide clearance for equipment during grading operations and vehicle parking. In the case of tree number 16 it will be substantial, currently the easterly branches arc to grade and the street-side branches do not meet elevation requirements.

RECOMMENDATIONS

Tree care activities should be carried out in accordance with the American National Standards Institute A300 for Tree Care Operations, specifically Parts 1 and 5 pertaining to Pruning and Management of Trees During Site Development and Construction. An ISA Certified Arborist should monitor the grading within the tree protection zones and insure any roots severed are properly pruned. Appropriate remedial treatments can be prescribed when the extent of the impacts to individual trees are known. All of the species to be impacted by the construction activities are fairly tolerant to disturbance and will likely adapt without suffering significant decline.

If you have any questions or require clarification, please feel free to contact me.

Wayne McKee
ISA Certified Arborist WE 0959A
ISA Tree Risk Assessment Qualified
B S Forestry, Humboldt State University

ASSUMPTIONS AND LIMITING CONDITIONS

1. Care has been taken to obtain all information from reliable sources. All data has been verified insofar as possible; however, the consultant can neither guarantee nor be responsible for the accuracy of information provided by others.

2. The consultant shall not be required to give a deposition and/or attend court by reason of this report unless subsequent contractual arrangements are made for in advance, including payment of an additional fee for such services according to our standard fee schedule, adjusted yearly, and terms of the subsequent contract of engagement.

3. Ownership of documents produced passes to the Client only when all fees have been paid. Possession of this report or a copy thereof does not imply right of publication or use for any purpose by any other than the person to whom it is addressed, without the prior expressed written or verbal consent of the consultant.

4. Neither all nor any part of the contents of this report, nor copy thereof, shall be conveyed by anyone, including the client, to the public through advertising, public relations, news, sales, or other media, without the prior expressed written or verbal consent of the consultant, particularly as to value conclusions, identity of the consultant, or any reference to any professional society or institute or to any initialed designation conferred upon the consultant as stated in his qualifications.

5. This report and any values expressed herein represent the opinion of the consultant and the consultant's fee is in no way contingent upon the reporting of a specified value, a stipulated result, the occurrence of a subsequent event, nor upon any finding to be reported.

6. Sketches, diagrams, graphs, drawings and photographs within this report are intended as visual aids and are not necessarily to scale and should not be construed as engineering or architectural reports or surveys.

7. Unless expressed otherwise: 1) information contained in this report covers only those items that were examined and reflects the condition of those items at the time of inspection; and 2) the inspection is limited to visual examination of accessible items without laboratory analysis, dissection, excavation, or probing unless otherwise stated.

8. This report is based on the observations and opinions of Wayne McKee, and does not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described herein. Neither this author nor Acorn Arboricultural Services, Inc. has assumed any responsibility for liability associated with the trees on or adjacent to this project site, their future demise and/or any damage which may result therefrom.

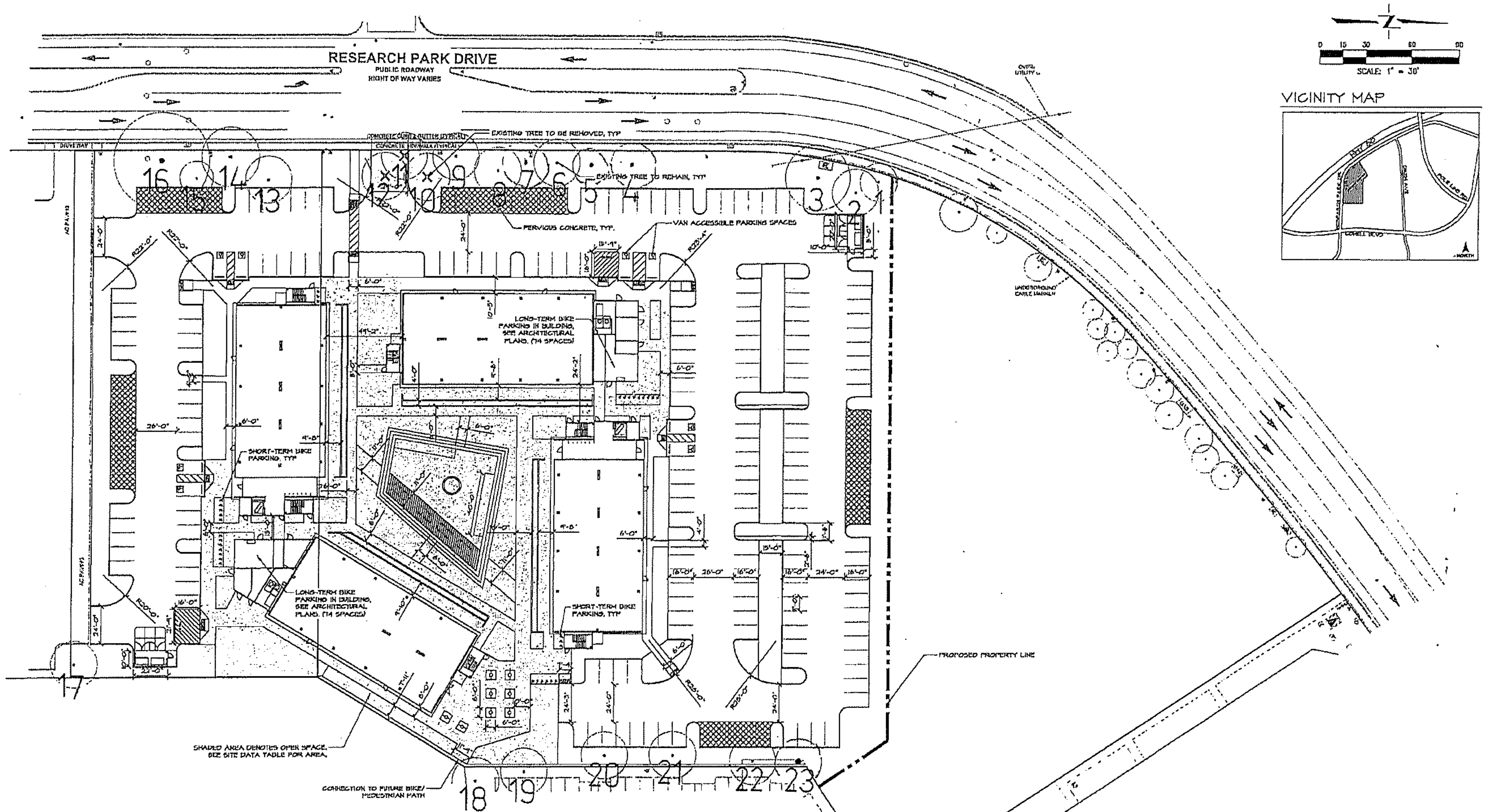
DEFINITIONS

Tree Number:	Corresponds to aluminum tag attached to the tree.
Species Identification:	Scientific or common species name.
Diameter (DBH):	This is the trunk diameter measured at breast height (industry standard 4.5 feet above ground level).
Dripline radius (DLR):	A radius equal to the horizontal distance from the trunk of the tree to the end of the farthest most branch tip.
Defect:	An injury, growth patterns, decay or other conditions that reduce the tree's structural strength.
Crown Spread (CS):	A measurement made of the crown form a point farthest from the trunk at the edge of the crown to the opposite crown edge.
Live Crown Ratio:	The ratio of crown length to total tree height.
Root Crown:	Assessment of the root crown/collar area located at the base of the trunk of the tree at soil level.
Trunk:	Assessment of the tree's main trunk from ground level generally to the point of the primary crotch structure.
Limbs:	Assessment of both smaller and larger branching, generally from primary crotch structure to branch tips.
Foliage:	Tree's leaves.
Overall Condition:	Describes overall condition of the tree in terms of structure and vigor.
Recommendation:	Maintenance, monitoring, or furthermore through inspections, based upon observed characteristics noted at the time the data was collected
Risk:	The likelihood of a conflict or tree failure occurring and affecting a target, and the severity of the associated consequences---personal injury, property damage, or disruption of activities.
Sprouts:	Arise from epicormic buds that are stimulated to grow and produce sprouts as a result of stress i.e. sudden environmental change, thinning, crown dieback, heavy pruning, root death, cold, change in the water table etc.

TREE CONDITION RATING CRITERIA

RATING TERM	ROOT CROWN	TRUNK	LIMBS	FOLIAGE	STRUCTURE	VIGOR
Good	No apparent injuries, decay, cavities or evidence of hollowing; no anchoring roots exposed; no indications of infestation or disease	No apparent injuries, decay, cavities or evidence of hollowing; no codominant attachments or multiple trunk attachments are observed; no indications of infestation or disease	No apparent injuries, decay, cavities or evidence of hollowing; below average amount of dead limbs or twigs; no major limb failures or included bark; callus growth is vigorous	Leaf size, color and density are typical for the species; buds are normal in size, viable, abundant and uniform throughout the canopy; annual seasonal growth increments are average or above average; no insect or disease infestations/ infections evident	No apparent structural defects; no weak crotches; no excessively weighted branches and no significant cavities or decay	Tree appears healthy and has little or no significant deadwood; foliage is normal and healthy
Fair	Small to moderate injuries, decay, cavities or hollowing may be evident but are not currently affecting the overall structure; some evidence of infestation or disease may be present but is not currently affecting the tree's structure	Small to moderate injuries, decay, cavities or hollowing may be evident; codominant branching or multiple trunk attachments or minor bark inclusion may be observed; some infestation or disease may be present but not currently affecting the tree's structure	Small to moderate injuries, decay or cavities may be present; average or above average dead limbs or twigs may be present; some limb failures or bark inclusion observed; callus growth is average	Leaf size, color and density are typical or slightly below typical for the species; buds are normal or slightly sparse with potentially varied viability, abundance and distribution throughout the canopy; annual seasonal growth increments are average or slightly below average; minor insect or disease infestation/infection may be present	Minor structural problems such as weak crotches, minor wounds and/or cavities or moderate amount of excessive weight; non-critical structural defects which can be mitigated through pruning, cabling or bracing	Tree appears stressed or partially damaged; minimal vegetative growth since previous season; moderate amount of deadwood, abnormal foliage and minor lesions or cambium dieback
Poor	Moderate to severe injuries, decay, cavities or hollowing may be evident and are affecting the overall structure; presence of infestation or disease may be significant and affecting the tree's structure	Moderate to severe injuries, decay, cavities or hollowing may be evident and are affecting the tree's structure; presence of infestation or disease may be significant and affecting the tree's structure	Severe injuries, decay or cavities may be present; major deadwood, twig dieback, limb failures or bark inclusion observed; callus growth is below average	Leaf size, color and density are obviously abnormal; buds are obviously abnormal or absent; annual seasonal growth is well below average for the species; insect or disease problems may be severe	Obvious major structural problems which cannot be corrected with mitigation; potential for major limb, trunk or root system failure is high; significant decay or dieback may be present	Tree health is declining; no new vegetative growth; large amounts of deadwood; foliage is severely abnormal

The ratings "poor to fair" and "fair to good" are used to describe trees that fall between the described major categories and have elements of both



SITE DATA & REQUIREMENTS

	UNIT INFO				CAR PARKING		ADA CAR PARKING		BIKE PARKING				OPEN SPACE
	PER ARCHITECTURAL PLANS				PER 40.15.090 MIXED USE (M-U)		PER CBC 11B-208.2		PER 40.25A.040 BICYCLE PARKING STANDARDS				PER 40.15.070 MIXED USE (M-U)
RESIDENTIAL	UNIT TYPE	# OF UNITS	# OF BEDROOMS	SQUARE FEET (UNIT AREA & COMMON AREA)	CAR PARKING REQ PER UNIT TYPE	TOTAL CAR PARKING REQ	STANDARD ADA SPACES	VAN ACCESSIBLE SPACES	BIKE PARKING REQ PER BEDROOM	TOTAL BIKE PARKING REQ	SHORT TERM BIKE PARK REQ (25%)	LONG TERM BIKE PARK REQ (75%)	OPEN SPACE REQ PER GROSS SF (25%)
	STUDIO	32	32		1	32	MIN 1 PER ACCESSIBLE RESIDENTIAL UNIT (5% OF UNITS) / MIN 7 FOR 261-300 SPACES	1 PER EVERY 6 OR FRACTION OF 6 SPACES	1	32			
	1 BR	96	96		1	96			1	96			
	2 BR	32	64		1	32			1	64			
	TOTAL	160	192	136,431		160				192	48	144	34,806
TECH	UNIT TYPE			SQUARE FEET	CAR PARKING REQ PER GROSS SF	TOTAL CAR PARKING REQ			BIKE PARKING REQ PER GROSS SF	TOTAL BIKE PARKING REQ	SHORT TERM BIKE PARK REQ (75%)	LONG TERM BIKE PARK REQ (25%)	OPEN SPACE REQ PER GROSS SF (0%)
	TECH SPACE	4	N/A	28,912	1/500	54			1/1,500	18	13	4	N/A
TOTAL				165,343		214	8	2		210	61	148	34,806
TOTAL PROVIDED ONSITE						214	[illegible]	[illegible]		210	68	148	40,100

NO.	DATE	REVISIONS	BY	APPD.

DESIGNED BY: DM
DRAWN BY: DM
CHECKED BY: ME
SCALE: 1"=30'

CUNNINGHAM ENGINEERING

CECWEST.COM

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UNIVERSITY RESEARCH PARK

PLANNING DESIGN REVIEW APPLICATION

SITE PLAN

DAVIS CALIFORNIA

SHEET L1 OF 4

DATE: 9/10/18

JOB NO: 1641.04