Appendix BIO-1

Arborist Report

ARBORIST REPORT
AND
TREE INVENTORY SUMMARY

LEWIS OPERATING CORP.
MATHER SOUTH PROJECT SITE
County of Sacramento, California

Prepared for:

Fuhrman Leamy Land Group
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April 10, 2014

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COPYRIGHT STATEMENT

QUALIFICATION STATEMENT

Sierra Nevada Arborists is a fully insured, Rio Linda-based arboriculture consulting firm founded in January of 1998 by its Principal, Edwin E. Stirtz. Mr. Stirtz is an ISA Certified Arborist and a member of the American Society of Consulting Arborists and International Society of Arboriculture. Mr. Stirtz possesses in excess of 30 years experience in horticulture and arboriculture, both maintenance and construction, and has spent the last 23 years as a consulting and preservation specialist in the Sacramento and surrounding regions.

INTRODUCTION

Sierra Nevada Arborists is pleased to present this Arborist Report and Tree Inventory Summary for the trees located within and/or overhanging the property located in the County of Sacramento, California. This Arborist Report and Tree Inventory Summary memorializes tree data obtained by Edwin E. Stirtz, ISA Certified Arborist WE-0510A, at the time of field reconnaissance and inventory efforts on March 27 through April 10, 2014.

SCOPE OF INVENTORY EFFORT

The County of Sacramento Tree Preservation Ordinance (Sacramento County Code Title 19, Chapter 19.12) regulates both the removal of protected trees and the encroachment of construction activities within their driplines. The Ordinance defines a "tree" as "any living native oak tree having at least one trunk of six inches or more in diameter measured four and one-half feet above the ground, or a multi-trunked native oak tree having an aggregate diameter of ten inches or more, measured four and one-half feet above the ground." In addition, all native oak and specified non-oak native trees which measure four inches in diameter and larger (or 10-inch aggregate diameter for multi-trunk native oak and Northern California Black Walnut trees) and other non-native trees with trunk diameters of 19 inches and larger are afforded various levels of protection through the County's environmental review policy. These separate requirements are not based solely on the Sacramento County Tree Preservation Ordinance. Tree inventories and arborist reports submitted to the Sacramento County Department of Environmental Review and Assessment ("DERA") are used, among other things, to evaluate project impacts and create appropriate mitigation pursuant to the Sacramento County General Plan policies and CEQA. To that end, on January 25, 2008, DERA promulgated a separate set of criteria to be utilized when preparing tree inventories and arborist reports for a proposed development site.

At the request of Fuhrman Leamy Land Group, on March 27 through April 10, 2014, Edwin E. Stirtz of Sierra Nevada Arborists visited the property located in the County of Sacramento, California. The purpose of this field reconnaissance effort was to identify and inventory the trees within and/or overhanging the proposed project site which measured four inches in diameter and larger measured at breast height ("DBH"), specifically including the identification of any native oaks, California Sycamore, Northern California Black Walnut, Oregon Ash, Goodding's Black Willow, California Box Elder, White Alder and California Buckeye as requested by the Sacramento County Department of Environmental Review and Assessment ("DERA") in their Arborist Report Requirements dated January 25, 2008.

This Arborist Report and Tree Inventory Summary presents information concerning the species, size and current condition of the trees within the proposed project area, along with pre-development recommendations on a tree-by-tree basis which logically follow the characteristics noted within the trees at the time of field inventory efforts. Information concerning the nature and extent of root system and canopy impacts which will be sustained by the trees from proposed development activities, along with specific tree-by-tree mitigation recommendations for the trees which will sustain encroachment into their protected root

zones can be provided in a Supplemental Arborist Report and Construction Impact Assessment once development plans have been refined and finalized for the proposed project area.

METHODOLOGY

During field reconnaissance and inventory efforts Edwin E. Stirtz of Sierra Nevada Arborists conducted a visual review from ground level of the trees within and/or overhanging the proposed project area as depicted on the Site Map which was provided to our office for field reference by Fuhrman Leamy Land Group. The trees which met the defined criteria were identified in the field by affixing to the tree's trunk a round, pre-stamped metal numbering tag backed with blue flagging for visibility. The tree numbers utilized in this report and accompanying inventory summaries correspond to the tree tag which is affixed to the tree in the field, and those tree numbers or grouping of numbers have been rough-plotted on the enclosed Site Map so that the precise vertical and horizontal location of the trees may be surveyed in the field by a licensed land surveyor and data for the trees (i.e. tree number, diameter, dripline and protected root zone radii) may be properly depicted on future development plans and Tree Location Exhibit as requested by DERA.

At the time of field identification and inventory efforts specific data was gathered for each tagged tree including the tree's species, diameter measured at breast height ("DBH") and dripline radius ("DLR"). In addition, for the trees which met the criteria of the DERA Requirements and/or County of Sacramento Tree Preservation Ordinance an assessment was made of the tree's root crown/collar, trunk, limbs and foliage. Utilizing this data the tree's overall structural condition and vigor were separately assessed ranging from "excellent"[1] to "poor" based upon the observed characteristics noted within the tree and the Arborist's best professional judgment. Ratings are subjective and are dependent upon both the structure and vigor of the tree. 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 structural rating reflects the root crown/collar, trunk and branch configurations; canopy balance; the presence of included bark, weak crotches and other structural defects and decay and the potential for structural failure. Finally, notable characteristics were documented and recommendations on a tree-by-tree basis were made which logically followed the observed characteristics noted within the trees at the time of the field inventory effort. The recommendations are based on the assumption that the tree would be introduced into a developed environment and may require maintenance and/or may not be suitable for retention within a post-development setting.

[1] It is rare that a tree qualifies in an "excellent" category, and it should be noted that there were no trees observed within the project area which fell within the criteria of an "excellent" or "good" rating. A complete description of the terms and ratings utilized in this report and accompany inventory summary are found on pages 9-10.

SUMMARY OF INVENTORY EFFORT

Field reconnaissance and inventory efforts found 477 trees measuring four inches in diameter and larger measured at breast height within and/or overhanging the proposed project area. Composition of the 477 inventoried trees includes the following species and accompanying aggregate diameter inches:

SPECIES DIVERSIFICATION			
Black Locust	=	2 trees	(29 aggregate diameter inches)
Brazilian Pepper	=	8 trees	(179 aggregate diameter inches)
Elm sp.	=	12 trees	(239 aggregate diameter inches)
Fremont Cottonwood	=	453 trees	(8,958 aggregate diameter inches)
Pacific Willow	=	2 trees	(38 aggregate diameter inches)

Our field inventory effort found that 298 of the inventoried trees within and/or overhanging the project boundaries did not meet the criteria of the County of Sacramento Tree Preservation and Protection Ordinance; however, these trees have been memorialized within this report due to their size (i.e., all trees which measure 4"+ DBH) to accurately document the trees' species, diameter and dripline measurements for mapping purposes as requested by the Sacramento County Department of Environmental Review and Assessment. For reference, the non-ordinance trees have been highlighted in blue within the accompanying Inventory Summary.

Recommended Removals

At this time, 61 trees have been recommended for removal from the proposed project area due to the nature and extent of defects, compromised health and/or structural instability noted at the time of field inventory efforts. If these trees were retained within the proposed project area it is our opinion that it may be hazardous depending upon their proximity to planned development activities.[2] For reference, the trees which have been recommended for removal due to the severity of noted defects, compromised health and/or structural instability are highlighted in green within the accompanying inventory summaries and are briefly summarized as follows:

TREE #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT	
						STRUCTURE	VIGOR
1	Fremont Cottonwood	*(Populus fremontii)*		23	25	Poor	Poor
3	Fremont Cottonwood	*(Populus fremontii)*		40	31	Poor	Fair
33	Fremont Cottonwood	*(Populus fremontii)*		36	32	Poor to fair	Fair
36	Fremont Cottonwood	*(Populus fremontii)*		32	29	Poor	Fair
63	Fremont Cottonwood	*(Populus fremontii)*		21	24	Poor	Fair
66	Fremont Cottonwood	*(Populus fremontii)*		20	21	Poor	Fair
72	Fremont Cottonwood	*(Populus fremontii)*		21	18	Poor	Fair
80	Fremont Cottonwood	*(Populus fremontii)*		24	30	Poor	Fair
88	Fremont Cottonwood	*(Populus fremontii)*		21	18	Poor	Fair

[2] At this time Tree Hazard Evaluation forms have not been prepared for these trees. In lieu, specific details concerning the nature and extent of defects noted within the tree at the time of field inventory efforts on March 27 through April 10, 2014, have been included within the "notable characteristics" column of the accompanying inventory summaries. It is our understanding, based upon past conversations with Todd Smith of DERA, that this level of detail is sufficient and that Tree Hazard Evaluation forms are unnecessary due to our inability to provide a meaningful "target rating" at this early stage of the project.

TREE #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT	
						STRUCTURE	VIGOR
93	Fremont Cottonwood	*(Populus fremontii)*		29	26	Poor to fair	Fair
95	Fremont Cottonwood	*(Populus fremontii)*		31	20	Poor	Poor to fair
125	Fremont Cottonwood	*(Populus fremontii)*	19,21	40	33	Poor	Fair
126	Fremont Cottonwood	*(Populus fremontii)*		23	31	Poor	Fair
132	Fremont Cottonwood	*(Populus fremontii)*		23	34	Poor	Fair
180	Fremont Cottonwood	*(Populus fremontii)*		33	31	Poor	Fair
183	Fremont Cottonwood	*(Populus fremontii)*		23	26	Poor	Fair
186	Fremont Cottonwood	*(Populus fremontii)*		23	10	Poor	Poor to fair
187	Fremont Cottonwood	*(Populus fremontii)*		31	34	Poor	Fair
191	Fremont Cottonwood	*(Populus fremontii)*		34	32	Poor	Fair
192	Fremont Cottonwood	*(Populus fremontii)*		23	26	Poor	Fair
197	Fremont Cottonwood	*(Populus fremontii)*		34	50	Poor	Fair
199	Fremont Cottonwood	*(Populus fremontii)*		37	31	Poor	Fair
202	Fremont Cottonwood	*(Populus fremontii)*		41	32	Poor	Fair
204	Fremont Cottonwood	*(Populus fremontii)*		31	29	Poor	Fair
206	Fremont Cottonwood	*(Populus fremontii)*		42	32	Poor	Fair
207	Fremont Cottonwood	*(Populus fremontii)*		23	28	Poor to fair	Fair
211	Fremont Cottonwood	*(Populus fremontii)*		27	30	Poor	Fair
215	Fremont Cottonwood	*(Populus fremontii)*		24	30	Poor to fair	Fair

TREE #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT	
						STRUCTURE	VIGOR
222	Fremont Cottonwood	*(Populus fremontii)*		19	23	Poor	Poor to fair
223	Fremont Cottonwood	*(Populus fremontii)*		23	23	Poor	Fair
229	Fremont Cottonwood	*(Populus fremontii)*	17,23	40	32	Poor	Fair
232	Fremont Cottonwood	*(Populus fremontii)*		24	26	Poor	Fair
234	Fremont Cottonwood	*(Populus fremontii)*		22	28	Poor	Fair
236	Fremont Cottonwood	*(Populus fremontii)*		28	30	Poor to fair	Fair
239	Fremont Cottonwood	*(Populus fremontii)*		32	30	Poor	Fair
240	Fremont Cottonwood	*(Populus fremontii)*		34	32	Poor	Fair
243	Fremont Cottonwood	*(Populus fremontii)*	18,31	49	34	Poor	Fair
262	Fremont Cottonwood	*(Populus fremontii)*		21	23	Poor	Fair
263	Fremont Cottonwood	*(Populus fremontii)*	7,8,8,16	39	20	Poor	Fair
270	Fremont Cottonwood	*(Populus fremontii)*	13,14	27	17	Poor	Fair
273	Fremont Cottonwood	*(Populus fremontii)*	13,16	29	24	Poor to fair	Fair
274	Fremont Cottonwood	*(Populus fremontii)*		31	33	Poor to fair	Fair
279	Fremont Cottonwood	*(Populus fremontii)*		35	36	Poor	Fair
281	Fremont Cottonwood	*(Populus fremontii)*		29	20	Poor	Fair
282	Fremont Cottonwood	*(Populus fremontii)*		34	36	Poor	Fair
284	Fremont Cottonwood	*(Populus fremontii)*	15, 18	33	25	Poor	Fair
285	Fremont Cottonwood	*(Populus fremontii)*		34	20	Poor	Fair

TREE #	COMMON NAME	SPECIES	MULTI-STEMS (inches)	TOTAL DBH (inches)	DLR (feet)	CONDITIONAL ASSESSMENT	
						STRUCTURE	VIGOR
288	Fremont Cottonwood	*(Populus fremontii)*	20,22	42	28	Poor	Fair
289	Fremont Cottonwood	*(Populus fremontii)*		25	29	Poor	Fair
291	Fremont Cottonwood	*(Populus fremontii)*		32	30	Poor	Fair
292	Fremont Cottonwood	*(Populus fremontii)*	14,20	34	32	Poor	Fair
293	Fremont Cottonwood	*(Populus fremontii)*	6,14	20	26	Poor	Fair
405	Fremont Cottonwood	*(Populus fremontii)*		21	22	Poor	Fair
486	Fremont Cottonwood	*(Populus fremontii)*		35	34	Poor	Fair
487	Fremont Cottonwood	*(Populus fremontii)*		23	32	Poor	Fair
510	Elm sp.	*(Ulmus sp.)*		24	17	Poor to fair	Poor to fair
511	Elm sp.	*(Ulmus sp.)*		28	25	Poor to fair	Fair
2501	Elm sp.	*(Ulmus sp.)*		23	18	Poor	Fair
2506	Fremont Cottonwood	*(Populus fremontii)*		24	31	Poor	Fair
2564	Fremont Cottonwood	*(Populus fremontii)*	12,17,24	53	30	Poor	Fair
2565	Fremont Cottonwood	*(Populus fremontii)*		40	37	Poor	Fair

It should also be noted that some of the trees within the proposed project area are trees which may be undesirable on residential lots, or are trees which will require periodic/seasonal monitoring to assess the trees' ongoing structural integrity. At this early stage of the project Sierra Nevada Arborists has not recommended the removal of these trees since development plans, including proposed home sites and building footprints, have not yet been finalized and the precise location of these trees in proximity to planned improvement activities is not known. At this time it is recommended that these trees be monitored and thoroughly inspected by a qualified ISA Certified Arborist on at least an annual basis to keep

abreast of the trees' changing condition(s) and to assess the trees' ongoing structural integrity and potential for hazard in a developed environment.

CONSTRUCTION IMPACT ASSESSMENT

This Arborist Report and Tree Inventory Summary is intended to provide to Fuhrman Leamy Land Group, the County of Sacramento and other members of the development team a detailed *pre-development review* of the species, size, and current structure and vigor of the trees within and/or overhanging the proposed project area. It is not an exhaustive review of the impacts which will be sustained from project implementation. At this early stage of the project specific root system and canopy impacts on a tree-by-tree basis cannot be definitively assessed until the site development, grading, and other improvement plans have been refined and finalized and data from the accompanying inventory summary (i.e., tree numbers, dripline radius, and root protection zones) is properly depicted on the plans.

Since trees are living organisms whose condition may change at any time a complete assessment of construction impacts and specific recommendations to help mitigate for the adverse impacts which may be sustained by the trees from contemplated construction activities cannot be made until the development plans have been refined and finalized. Once final plans have been developed for the site a qualified ISA Certified Arborist with special expertise and demonstrated experience with construction projects in and among native and non-native trees should review those plans and provide a more detailed assessment of impacts, including identification of trees which may require removal to facilitate home construction and other contemplated site development activities. This review will be particularly important if structures and/or residential activities will fall within or near the fall zone of a tree which has been noted as exhibiting structural defects, questionable long-term longevity and/or a conditional rating which is less than "fair", and for trees which measure 16 inches and greater in diameter which will be retained within close proximity to development as trees of this size may pose a more significant hazard if a sudden limb shed and/or catastrophic failure should occur. In addition, the review should include an assessment of root system and canopy impacts which will be sustained by the trees which will be retained within the proposed development area, along with specific recommendations on a tree-by-tree basis to help reduce adverse impacts of construction on the retained trees. In the meantime, this report provides some pre-development recommendations which logically follow the observed characteristics noted in the trees at the time of the field inventory efforts, as well as General Protection Measures which should be utilized as a guideline for the protection of trees which may be retained within the development area. These recommendations will require modification and/or augmentation as development plans are refined and finalized.

GENERAL COMMENTS AND ARBORISTS' DISCLAIMER

The County of Sacramento regulates both the removal of "protected trees" and the encroachment of construction activities within their driplines. Therefore, a tree permit and/or additional development authorization should be obtained from the County of Sacramento prior to the removal of any trees within the proposed project area. All terms and conditions of the tree permit and/or other Conditions of Approval are the sole and exclusive responsibility of the project applicant. It should be noted that prior to final inspection written verification from an ISA Certified Arborist may be required certifying the approved removal activities and/or implementation of other Conditions of Approval outlined for the retained trees on the site. ***Sierra Nevada Arborists will not provide written Certification of Compliance unless we have been provided with a copy of the approved site development plans, applicable permits and/or Conditions of Approval, and are on site to monitor and observe regulated activities during the course of construction.*** Therefore, it will be necessary for the project applicant to notify Sierra Nevada Arborists well in advance (at least 72 hours prior notice) of any regulated activities which are scheduled to occur on site so that those activities can be properly monitored and documented for compliance certification.

Please bear in mind that implementation of the recommendations provided within this report will help to reduce adverse impacts of construction on the retained trees; however, implementation of any recommendations should not be viewed as a guarantee or warranty against the trees' ultimate demise and/or failure in the future. Arborists are tree specialists who use their education, knowledge, training and experience to examine trees, recommend measures to enhance the beauty and health of the trees and ***attempt to reduce the risk of living near trees***. Arborists cannot detect every condition that could possibly lead to the structural failure of a tree. There are some inherent risks with trees that cannot be predicted with any degree of certainty, even by a skilled and experienced arborist. Entities who choose to construct homes on wooded property are accepting a certain level of risk from unpredictable tree related hazards such as toppling in storms, limbs falling and fires that may damage property at some time in the future. Since trees are living organisms their structure and vigor constantly change over time, and they are not immune to changes in site conditions or seasonal variations in the weather. Further, conditions are often hidden within the tree and/or below ground. Arborists and other tree care professionals cannot guarantee that a tree will be healthy and/or safe under all circumstances or for a specific period of time. Likewise remedial treatments cannot be guaranteed. Trees can be managed but they cannot be controlled. To develop land and live near trees is to accept some degree of risk and the only way to eliminate all risk associated with trees would be to eliminate all of the trees. ***An entity who develops land and builds a home with a tree in the vicinity should be aware of and inform their future residents of this Arborists' Disclaimer, and be further advised that the developer and the future residents assume the risk that a tree could at any time suffer a branch and/or limb failure, blow over in a storm and/or fail for no apparent reason which may cause bodily injury or property damage***. Sierra Nevada Arborists cannot predict acts of nature including, without limitation, storms of sufficient strength which can even take down a tree with a structurally sound and vigorous appearance.

Finally, the trees preserved within and/or overhanging the proposed project area will experience a physical environment different from the pre-development environment. As a result, tree health and structural stability should be regularly monitored. Occasional pruning, fertilization, mulch, pest management, replanting and/or irrigation may be required. In addition, ***provisions for monitoring both tree health and structural stability following construction must be made a priority***. As trees age, the likelihood of failure of branches or entire trees increases. Therefore, ***the future management plan must include an annual inspection*** by a qualified ISA Certified Arborist to keep abreast of the trees' changing condition(s) and to assess the trees' ongoing structural integrity and potential for hazard in a developed environment.

Thank you for allowing Sierra Nevada Arborists to assist you with this review. Please feel free to give me a call if you have any questions or require additional information and/or clarification.

Sincerely,

Edwin E. Stirtz
ISA Certified Arborist WE-0510A
Member, American Society of Consulting Arborists

ASSUMPTIONS AND LIMITING CONDITIONS

1. Any legal description provided to the consultant is assumed to be correct. Any titles and ownership to any property are assumed to be good and marketable. No responsibility is assumed for matters legal in character. Any and all property is appraised or evaluated as though free and clear, under responsible ownership and competent management.

2. It is assumed that any property is not in violation of any applicable codes, ordinances, statutes, or other governmental regulations.

3. 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.

4. 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.

5. Loss or alteration of any part of this report invalidates the entire report. Ownership of any documents produced passes to the Client only when all fess have been paid.

6. 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.

7. 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.

8. 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.

9. 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. The reproduction of information generated by other consultants is for coordination and ease of

reference. Inclusion of such information does not constitute a representation by the consultant as to the sufficiency or accuracy of the information.

10. 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, probing or coring, unless otherwise stated.

11. There is no warranty or guarantee, expressed or implied, that problems or deficiencies of the plants or property in question may not arise in the future.

12. This report is based on the observations and opinions of Edwin E. Stirtz, and does not provide guarantees regarding the future performance, health, vigor, structural stability or safety of the plants described herein. Neither this author nor Sierra Nevada Arborists 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.

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13. The information contained within this report is true to the best of the author's knowledge and experience as of the date it was prepared; however, certain conditions may exist which only a comprehensive, scientific, investigation might reveal which should be performed by other consulting professionals.

14. The legal description, dimensions, and areas herein are assumed to be correct. No responsibility is assumed for matters that are legal in nature.

15. Any changes to an established tree's environment can cause its decline, death and/or structural failure.

DEFINITIONS AND RATINGS

Tree Number:	Corresponds to aluminum tag attached to the tree.
Species Identification:	Scientific and 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 prior to any cutting. When depicted on a map, the dripline will appear as an irregularly shaped circle that follows the contour of the tree's branches as seen from overhead.
Protected Zone:	A circle equal to the largest radius of a protected tree's dripline plus 1 foot.
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:	Pre-development recommendations based upon observed characteristics noted at the time of the field inventory effort.
Obscured:	Occasionally some portion of the tree may be obscured from visual inspection due to the presence of dense vegetation which, during the course of inspection for the arborist report, prevented a complete evaluation of the tree. In these cases, if the tree is to be retained on site the vegetation should be removed to allow for a complete assessment of the tree prior to making final decisions regarding the suitability for retention.

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

GENERAL PROTECTION GUIDELINES
FOR TREES PLANNED FOR PRESERVATION

Great care must be exercised when work is conducted upon or around protected trees. The purpose of these General Protection Measures is to provide guidelines to protect the health of the affected protected trees. These guidelines apply to all encroachments into the protected zone of a protected tree, and may be incorporated into tree permits and/or other Conditions of Approval as deemed appropriate by the applicable governing body.

- A circle with a radius measurement from the trunk of the tree to the tip of its longest limb, plus one foot, shall constitute the critical root zone protection area of each protected tree. Limbs must not be cut back in order to change the dripline. The area beneath the dripline is a critical portion of the root zone and defines the minimum protected area of each protected tree. Removing limbs that make up the dripline does not change the protected area.

- Any protected trees on site which require pruning shall be pruned by an ISA Certified Arborist prior to the start of construction work. All pruning shall be in accordance with the American National Standards Institute (ANSI) A300 pruning standards, ANSI Standard 2133.1-2000 regarding safety practices, and the International Society of Arboriculture (ISA) “Tree Pruning Guidelines” and Best Management Practices.

- Prior to initiating construction, temporary protective fencing shall be installed at least one foot outside the root protection zone of the protected trees in order to avoid damage to the tree canopies and root systems. Fencing shall be installed in accordance with the approved fencing plan prior to the commencement of any grading operations or such other time as determined by the review body. The developer shall contact the Project Arborist and the Planning Department for an inspection of the fencing prior to commencing construction activities on site.

- Signs shall be installed on the protective fence in four (4) equidistant locations around each individual protected tree. The size of each sign must be a minimum of two (2) feet by two (2) feet and must contain the following language:

  WARNING: THIS FENCE SHALL NOT BE REMOVED OR RELOCATED WITHOUT WRITTEN AUTHORIZATION FROM THE COUNTY OF SACRAMENTO MUNICIPAL SERVICES AGENCY

  Once approval has been obtained by the County of Sacramento Municipal Services Agency protective fencing shall remain in place throughout the entire construction period and shall not be removed, relocated, taken down or otherwise modified in whole or in part without prior written authorization from the Agency, or as deemed necessary by the Project Arborist to facilitate approved activities within the root protection zone.

- Any removal of paving or structures (i.e. demolition) that occurs within the dripline of a protected tree shall be done under the direct supervision of the Project Arborist. To the maximum extent feasible, demolition work within the dripline protection area of the protected tree shall be performed by hand. If the Project Arborist determines that it is not feasible to perform some portion(s) of this work by hand, then the smallest/lightest weight equipment that will adequately perform the demolition work shall be used.

- No signs, ropes, cables (except those which may be installed by an ISA Certified Arborist to provide limb support) or any other items shall be attached to the protected trees. Small metallic numbering tags for the purpose of identification in preparing tree reports and inventories shall be allowed.

- No vehicles, construction equipment, mobile homes/office, supplies, materials or facilities shall be driven, parked, stockpiled or located within the driplines of protected trees.

- Drainage patterns on the site shall not be modified so that water collects, stands or is diverted across the dripline of any protected tree.

- No trenching shall be allowed within the driplines of protected trees, except as specifically approved by the Planning Department as set forth in the project's Conditions of Approval and/or approved tree permit. If it is absolutely necessary to install underground utilities within the dripline of a protected tree the utility line within the protected zone shall be "bored and jacked" or performed utilizing hand tools to avoid root injury under the direct supervision of the Project Arborist.

- Grading within the protected zone of a protected tree shall be minimized. Cuts within the protected zone shall be maintained at less than 20% of the critical root zone area. Grade cuts shall be monitored by the Project Arborist. Any damaged roots encountered shall be root pruned and properly treated as deemed necessary by the Project Arborist.

- Minor roots less than one (1) inch in diameter encountered during approved excavation and/or grading activities may be cut, but damaged roots shall be traced back and cleanly cut behind any split, cracked or damaged area as deemed necessary by the Project Arborist.

- Major roots greater than one (1) inch in diameter encountered during approved excavation and/or grading activities may not be cut without approval of the Project Arborist. Depending upon the type of improvement being proposed, bridging techniques or a new site design may need to be employed to protect the roots and the tree.

- Cut faces, which will be exposed for more than 2-3 days, shall be covered with dense burlap fabric and watered to maintain soil moisture at least on a daily basis (or possibly more frequently during summer months). If any native ground surface fabric within the protected zone must be removed for any reason, it shall be replaced within forty-eight (48) hours.

- If fills exceed 1 foot in depth up to 20% of the critical root zone area, aeration systems may serve to mitigate the presence of the fill materials as determined by the Project Arborist.

- When fill materials are deemed necessary on two or three sides of a tree it is critical to provide for drainage away from the critical root zone area of the tree (particularly when considering heavy winter rainfalls). Overland releases and subterranean drains dug outside the critical root zone area and tied directly to the main storm drain system are two options.

- In cases where a permit has been approved for construction of a retaining wall(s) within the protected zone of a protected tree the applicant will be required to provide for immediate protection of exposed roots from moisture loss during the time prior to completion of the wall. The retaining wall within the protected zone of the protected tree shall be constructed within seventy-two (72) hours after completion of grading within the root protection zone.

- The construction of impervious surfaces within the dripline of a protected tree shall be minimized. When necessary, a piped aeration system shall be installed under the direct supervision of the Project Arborist.

- Preservation devices such as aeration systems, tree wells, drains, special paving and cabling systems must be installed in conformance with approved plans and certified by the Project Arborist.

- No sprinkler or irrigation system shall be installed in such a manner that sprays water or requires trenching within the dripline of a protected tree. An above ground drip irrigation system is recommended. An independent low-flow drip irrigation system may be used for establishing drought-tolerant plants within the protected zone of a protected tree. Irrigation shall be gradually reduced and discontinued after a two (2) year period.

- All portions of permanent fencing that will encroach into the protected zone of a protected tree shall be constructed using posts set no closer than ten (10) feet on center. Posts shall be spaced in such a manner as to maximize the separation between the tree trunks and the posts in order to reduce impacts to the tree(s).

- Landscaping beneath native oak trees may include non-plant materials such as bark mulch, wood chips, boulders, etc. Planting live material under protected native oak trees is generally discouraged, and is not recommended within six (6) feet of the trunk of a native oak tree with a diameter a breast height (DBH) of eighteen (18) inches or less, or within ten (10) feet of the trunk of a native oak tree with a DBH of more than eighteen (18) inches. The only plant species which shall be planted within the dripline of native oak trees are those which are tolerant of the natural, semi-arid environs of the tree(s).