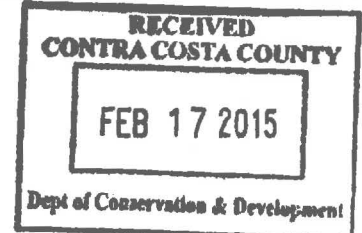


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# Tree Management Survey <sup>TPK-0009</sup>

Unitarian Universalist Church of Berkeley  
1 Lawson Road  
Kensington, CA

.....  
**January 20, 2015**

.....  
*Sustainable Solutions in the Urban Interface  
Since 1980*

*Certified Arborist #WE 0704 A*

## Introduction

I am retained by the Unitarian Universalist Church of Berkeley in Kensington to provide this Tree Management Survey for the existing Monterey Pines (*Pinus radiata*). Eighty (80) Monterey pine trees are surveyed to establish the existing condition of inventories trees and their individual suitability for retention.

Trees are assigned priority guidelines based on their individual health, structural stability and potential risks of failure. This evaluation uses ISA Best Management Practices in accordance with ANDS A-300 Standards. Tree removal recommendations are provided pursuant to guidelines defined in the County of Contra Costa - Municipal Code, Chapter 816-6, Ords. 94-59, 94-22-Tree Protection and Preservation.

My review of the site occurred on December 10, 2014. Tree diameters are measured at 54-inches above grade. Tree numbers in this survey correspond to those found on Sheet 1 and 3 of the Topographic Survey provided by Kister, Savio & Rei, Inc.

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## Summary

The site consists of a mix of introduced Eucalypts adjacent to parking areas within a large stand of mature Monterey pines (*Pinus radiata*) surrounding the broader, higher use central areas with buildings, child care, access roads, parking and pedestrian areas. An established and developing population of native Live oaks (*Quercus agrifolia*) and various naturally occurring understory natives are found within the stand of pines also located in dense groves on higher and lower elevations.

The more dominant, faster growing, shorter lived Monterey pines suppress growth of the more locally indigenous, slower growing, longer lived native Live oaks most obviously by succeeding in the competition for light and space. But lesser known is by altering soil pH to the more acidic by acting as an allopathic affect to suppress root growth of the more alkaline favoring oaks.

In my opinion, the Monterey pine trees surveyed are nearing their useful life expectancy. Tree health is increasingly diminishing and risks of limb and tree failure are increasing. And rather than attempting to extend individual tree life spans, improve tree health or reduce risks via pruning, the most effective tree management would consist of systematic tree removal with a selected tree replacement program. A 3-year tree removal plan is presented based on tree health, longevity and the identification of higher priority risks. The rate at which tree removals occur however regardless of priority assignment is only limited to budgetary restraints.

My evaluation is on the following pages.



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## Discussion

To the right of the page is the Tree Mortality Spiral, a useful graphic for illustrating the effects of tree age and mortality and environmental response over time. In the graphic, the tree is initially healthy, then injured, then becomes weakened and predisposed to attack by insects and disease, then declines. As the tree progresses along this spiral, the rate of decline quickens.

**This Tree Survey evaluation places the Monterey pines in the early to mid stages of decline.**

### Monterey Pine Background

The typical lifespan of a Monterey Pine in the Berkeley area ranges from 60 to 70 years depending on local conditions and care. Trees at the UUCB are likely within that range.

Root systems of these trees are shallow, localized and typically underdeveloped. Monterey pines are known to have a higher probability of failure on hillsides, and in competitive environments than on flat, or more open areas.

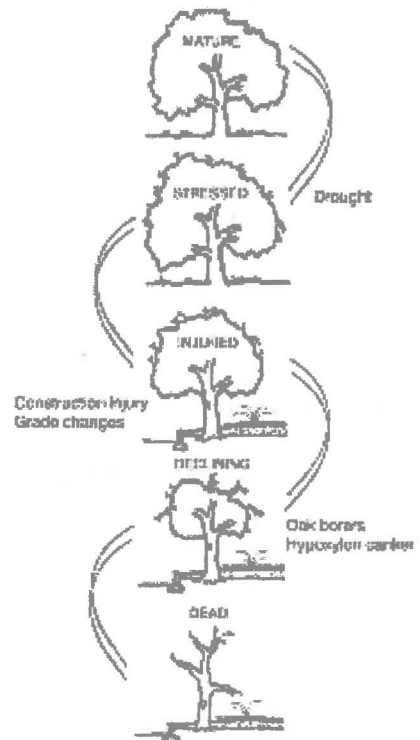
Additionally, seasonal conditions can aggravate tree structure that is predisposed to failure. Conditions include supersaturated soils followed by high winds and heavy rain-weighted foliage. Roots under these conditions lose their ability to adhere to soils as wind and gravity complete the cycle of failure.

### Tree Removal and Concerns for Erosion or Slope Stability

Existing native oaks and developing understory vegetation are likely to aide in limiting soil erosion and contribute to slope stability. Increased light from tree removals will accelerate understory plant and root growth to aide in supporting soils. Contributing elements to maintain slope stability also include leaving Pine tree stumps in the ground to allow existing roots to maintain the additional soil holding capacity. Soil bare areas where there is no vegetation in steeper elevations may also include mulch and jute netting while plants are introduced as roots establish into the local soil environment as a temporary mitigating element.

### Nesting and Tree Removal Season

Biologist Michael Wood 925.899.1282 at Wood-biological@mindspring.com will provide best localized information on wildlife nesting patterns.



### **Organic Mulch for Soil and Tree Health Management**

Applying organic mulch to the soil surface improves soil fertility through the decomposition of organic matter and microorganism activity. Organic mulch helps to retain moisture, regulate soil temperatures and reduces weed competition. Mulch may also provide benefits to slope stability. Wood chips processed from tree pruning and removal operations are ideal for this location.

### **Planting, Mitigation and Consideration of Water**

The local area is considered a native oak woodlands environment and it is widely accepted that natural colonization of natives is preferred over non-native plant introductions or any mandated tree replacements when the local environment is supportive.

The local environment at UUCB contains an existing healthy and naturally developing population of native Live oaks and understory vegetation. The introduction of more than a small selection of trees will create an overly competitive environment and risk sustainability of all affected trees.

As Monterey pines are removed; the newly open areas of light and space will allow the existing native vegetation to continue colonizing the area. 5 to 7 years later, selected areas can be thinned to develop the more desirable growth.

Prior to any commitment of mitigation planting, considerations should also include the demand for water and the more critically apparent this limited resource is today with the drought. Just planting 10, 24-inch box trees will require approximately 1600 gallons per month though the summer months.

#### **Additional considerations:**


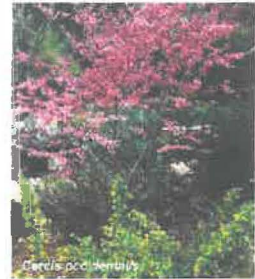

A word about the introduction and use of Coast redwoods (*Sequoia sempervirens*)



This overused species is now exhibiting the typical signs of overpopulation with various biotic and abiotic disorders that affect tree health, appearance and longevity. This species also tends to displace less aggressive, slower growing natives. Ultimately this species will impinge on views and repeat the failure cycle of the introduced Monterey pines. Use of this tree species is not recommended.

## Suitable Replacement Trees

This list is provided to include a conservative sample selection of various natives and non natives and is intended for use as indicated in high use areas and in selected open spaces as a natural extension to the existing developing native Live oak stands.

### Natives

	<p><b>Arbutus 'marina' (Arbutus)</b></p> <p>Upright multi-trunked branches are covered with a gorgeous smooth mahogany to cinnamon colored bark which exfoliates in late summer to expose the mottled appearance of both. Showy pendulous clusters of rosy-pink urn-shaped flowers. Can be used as understory plant on southern/western exposure, can be sheered as screen, shrub or trained to focal aesthetic adjacent to entry ways.</p>
	<p><b>Cercis occidentalis, (Western Redbud)</b></p> <p>Western redbud is a small deciduous tree. It has a nice upright form. It is popular for its showy, burgundy flowers that emerge in spring before the leaves. The leaves are glossy and heart-shaped. Tolerates most soils in irrigated or dry conditions once established. Can be used as understory plant on any exposure or used as focal aesthetic adjacent to entry ways.</p>
	<p><b>Lyonothamnus floribundus ssp. asplenifolius, (Catalinia Ironwood)</b></p> <p>Moderately fast growing evergreen tree. Its flowers are white with yellow centers and appear spring-summer. A fine tree for large focal point area, very ornamental and primitive looking. Tolerates most soils in irrigated or dry conditions once established. Better performance on slopes in well drained soils.</p>

	<p><b>Quercus agrifolia, (California Coast Live oak)</b> Native to the inland and coastal regions of California. A staple part of the native and early American ecology. Drought tolerant once established. Tolerates poor soils, but intolerant of turf and frequent irrigation. With proper care can develop into majestic form. Maintain healthy conditions to avoid harmful pests or diseases. Will grow 2-feet per year in earlier years.</p>
	<p><b>Tristania conferta or laurina (Brisbane Box) multi-trunked</b> <u>NON-NATIVE.</u> Showy modeled gray, pink and Mahogany colored bark that peels away to smooth. Petite, pendulous, creamy yellow flowers in summer. Can be used as understory plant on southern/western exposure, can be sheered as screen, shrub or trained to focal aesthetic adjacent to entry ways. Little water once established. Leaves are oval, leathery light green 4 to 6-inches long. Performs best in full sun. Tolerates most soils.</p>

**Planting Guidelines are available**

## Priority Management Ratings

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Priority Management Ratings are provided as a guideline for risk management mitigation and budgetary planning. Priority assignments however imply no limits to combining all priorities into one budget cycle.

The Tree Health Evaluation influences ratings and provides the guidelines for establishing priorities.

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### **Priority 1**

Trees with risks to health, stability or structure near pedestrian and vehicle frequented areas also adjacent to buildings and roads. Trees that are mature and nearing their useful life expectancy that compete with, or suppress understory natives, or affect maintenance or use of the subject property.

### **Priority 2**

Trees in low risk open space areas at the periphery of pedestrian and vehicle frequented areas with secondary concerns for health, stability or structure that are mature and nearing their useful life expectancy.

### **Priority 3**

Trees with low, or no immediate apparent risks to health, stability or structure that are mature and nearing their useful life expectancy. Priorities are provided as a guideline for risk management mitigation and budgetary planning.

# Tree Survey

Tree No.	Species	Size @ 54"	Health Vigor	<sup>2</sup> Retention Rating	Priority Removal Year 1-2-3	Comments
101	Monterey Pine <i>Pinus radiata</i>	20/16	Fair/Poor	Poor	1	In early decline. Co-dominant included bark. On slope. Native oaks exist as replacement.
102	Monterey Pine <i>Pinus radiata</i>	18	Fair/Poor	Poor	1	Leans moderately West on slope.
103	Monterey Pine <i>Pinus radiata</i>	22/18/ 18/19	Poor	Poor	1	Co-dominant, included bark. In decline. Circling roots on slope. Native oaks exist as replacement.
104	Monterey Pine <i>Pinus radiata</i>	12	Poor	Poor	1	In decline. Moderate risk of failure.
105	Monterey Pine <i>Pinus radiata</i>	11	Poor	Poor	1	In decline. Moderate risk of failure.
106	Monterey Pine <i>Pinus radiata</i>	22	Poor	Poor	1	In decline. Leans slightly to north.
107	Monterey Pine <i>Pinus radiata</i>	14	Poor	Poor	1	In decline. Moderate to severe lean. High risk of failure.
108	Monterey Pine <i>Pinus radiata</i>	19	Poor	Poor	1	Leans moderately toward parking.
109	Monterey Pine <i>Pinus radiata</i>	17	Poor	Poor	1	In decline. Borers at base.
110	Monterey Pine <i>Pinus radiata</i>	20	Poor	Poor	1	Corkscrew structure. Leans moderately to North/parking. Moderate risk of failure.
111	Monterey Pine <i>Pinus radiata</i>	17	Poor	Poor	1	Corkscrew structure. Leans moderately to South/parking. Moderate risk of failure.
112	Monterey Pine <i>Pinus radiata</i>	21	Poor	Poor	1	Circling roots-girdling. Moderate to high risk of failure.
113	Monterey Pine <i>Pinus radiata</i>	21	Poor	Poor	1	Corkscrew structure. Moderate risk of failure.
114	Monterey Pine <i>Pinus radiata</i>	25	Poor	Poor	1	Circling, girdling roots. 10% live crown ratio. Moderate risk of failure.
115	Monterey Pine <i>Pinus radiata</i>	30	Poor	Poor	1	Early stages of decline. In playground common area.
116	Monterey Pine <i>Pinus radiata</i>	25	Poor	Poor	1	Topped. 10% live crown ratio. Adjacent to playground at top of bank.

<sup>1,2</sup> See Tree Health Evaluation



# Tree Survey

Tree No.	Species	Size @ 54"	<sup>1</sup> Health Vigor	<sup>2</sup> Retention Rating	Priority Removal Year 1-2-3	Comments
117	Monterey Pine <i>Pinus radiata</i>	21	Poor	Poor	1	Corkscrew structure. Moderate risk of failure. 10% live crown ratio.
118	Monterey Pine <i>Pinus radiata</i>	24	Poor	Poor	1	Corkscrew structure. Moderate risk of failure. 10% live crown ratio.
119	Monterey Pine <i>Pinus radiata</i>	44	Fair/Good	Poor	2	Weakly attached co-dominant primary leaders @ 30' above grade prone to failure in low use area.
120	Monterey Pine <i>Pinus radiata</i>	20	Poor	Poor	1	Evidence of Pine Pitch Canker. Topped structure. In low use area.
121	Monterey Pine <i>Pinus radiata</i>	19	Poor	Poor	1	Suppressed structure. 5% live crown ratio. In decline.
122	Monterey Pine <i>Pinus radiata</i>	22	Poor	Poor	1	Suppressed structure. 5% live crown ratio. In decline.
123	Monterey Pine <i>Pinus radiata</i>	26	Fair	Poor	1	Dominant structure. 5% live crown ratio.
124	Monterey Pine <i>Pinus radiata</i>	14	Poor	Poor	1	Corkscrew structure. Leans to West over trail. Moderate risk of failure.
125	Monterey Pine <i>Pinus radiata</i>	13	Poor	Poor	1	Suppressed structure. Leans to West over trail. Moderate risk of failure.
126	Monterey Pine <i>Pinus radiata</i>	15	Poor	Poor	1	5% live crown ratio. In decline.
127	Monterey Pine <i>Pinus radiata</i>	23	Poor	Poor	1	5% live crown ratio. In decline.
128	Monterey Pine <i>Pinus radiata</i>	15	Poor	Poor	1	5% live. In decline. Leans moderately adjacent to trail. Moderate risk of failure.
129	Monterey Pine <i>Pinus radiata</i>	19	Fair/Poor	Poor	1	Leans slightly to West over trail. Understory Live Oak 8" suitable replacement.
130	Monterey Pine <i>Pinus radiata</i>	19	Fair/Poor	Poor	1	Leans slightly to West over trail. Understory Live Oak 8" suitable replacement.
131	Monterey Pine <i>Pinus radiata</i>	20	Fair/Poor	Poor	1	Leans slightly to West over trail. Understory Live Oak 8" suitable replacement.
132	Monterey Pine <i>Pinus radiata</i>	17	Poor	Poor	1	5% live crown ratio. Leans to West over trail. Moderate risk of failure.

<sup>1,2</sup>See Tree Health Evaluation

# Tree Survey

Tree No.	Species	Size @ 54"	Health Vigor	<sup>2</sup> Retention Rating	Priority Removal Year 1-2-3	Comments
133	Monterey Pine <i>Pinus radiata</i>	21	Poor	Poor	1	5% live crown ratio.
134	Monterey Pine <i>Pinus radiata</i>	21	Poor	Poor	1	10% live crown ratio. Bowing structure leans East to playground.
135	Monterey Pine <i>Pinus radiata</i>	12	Poor	Poor	1	In decline. 98% dead. High risk of failure.
136	Monterey Pine <i>Pinus radiata</i>	16	Poor	Poor	1	Leans West over walking trail. 5% live crown ratio. Moderate risk of failure.
137	Monterey Pine <i>Pinus radiata</i>	16	Fair	Poor	2	Suitable for retention in the near term. Even branch distribution and reasonably balanced structure.
138	Monterey Pine <i>Pinus radiata</i>	17	Poor	Poor	1	Bowing lean to East toward school/playground. Moderate risk of failure.
139	Monterey Pine <i>Pinus radiata</i>	19	Poor	Poor	2	10% live crown ratio.
140	Monterey Pine <i>Pinus radiata</i>	28	Poor	Poor	1	Asymmetrical branch distribution only on South. Moderate to low risk of failure.
141	Monterey Pine <i>Pinus radiata</i>	26	Poor	Poor	1	In decline. 90% dead. Understory Live Oak 10" suitable replacement.
142	Monterey Pine <i>Pinus radiata</i>	28/28	Fair/Poor	Poor	1	Co-dominant included structure. Adjacent to trail. Moderate risk of failure.
143	Monterey Pine <i>Pinus radiata</i>	15	Poor	Poor	1	In decline.
144	Monterey Pine <i>Pinus radiata</i>	26/30/ 22/25	Fair/Poor	Poor	1	Co-dominant included bark. Borers at base.
145	Monterey Pine <i>Pinus radiata</i>	31	Fair/Poor	Poor	2	Leans West toward Coast Redwood. Removal benefits Redwood.
146	Monterey Pine <i>Pinus radiata</i>	20	Fair/Poor	Poor	2	Leans West over Live Oaks. Removal benefits Oaks.
147	Monterey Pine <i>Pinus radiata</i>	30	Fair/Poor	Poor	2	Leans West over Live Oaks. Removal benefits Oaks.
148	Monterey Pine <i>Pinus radiata</i>	19	Fair/Poor	Poor	2	Leans West over Live Oaks. Removal benefits Oaks.

<sup>2</sup> See Tree Health Evaluation

# Tree Survey

Tree No.	Species	Size @ 54"	<sup>1</sup> Health Vigor	<sup>2</sup> Retention Rating	Priority Removal Year 1-2-3	Comments
149	Monterey Pine <i>Pinus radiata</i>	24	Poor	Poor	1	Dead. Moderate to high risk of failure.
150	Monterey Pine <i>Pinus radiata</i>	25	Poor	Poor	1	10% live crown ratio. In decline.
151	Monterey Pine <i>Pinus radiata</i>	23	Poor	Poor	1	5% live crown ratio. In decline.
152	Monterey Pine <i>Pinus radiata</i>	25	Fair/Poor	Poor	1	5% live canopy ratio. In decline.
153	Monterey Pine <i>Pinus radiata</i>	26	Fair/Poor	Poor	1	Co-dominant included bark. Leans over Live Oaks. Removal benefits Oaks.
154	Monterey Pine <i>Pinus radiata</i>	27	Fair/Poor	Poor	1	Leans West toward neighbor down slope. Moderate risk of failure.
155	Monterey Pine <i>Pinus radiata</i>	16	Poor	Poor	1	In decline. Several Live Oaks in vicinity are suitable replacements for the long term.
156	Monterey Pine <i>Pinus radiata</i>	19	Fair	Poor	1	Asymmetrical branch distribution to Southwest. Moderate risk of failure.
157	Monterey Pine <i>Pinus radiata</i>	27	Fair/Poor	Poor	1	Understory Live Oaks are suitable for the long term.
158	Monterey Pine <i>Pinus radiata</i>	26	Fair	Poor	1	30% live crown ratio. Understory Live oaks are suitable replacements.
159	Monterey Pine <i>Pinus radiata</i>	27	Fair	Poor	2	Understory Live oaks are suitable replacements.
160	Monterey Pine <i>Pinus radiata</i>	22	Fair	Poor	2	Understory Live oaks are suitable replacements.
161	Monterey Pine <i>Pinus radiata</i>	17	Poor	Poor	2	Understory Live oaks are suitable replacements.
162	Monterey Pine <i>Pinus radiata</i>	19	Poor	Poor	2	Understory Live oaks are suitable replacements. 5% live canopy ratio.
163	Monterey Pine <i>Pinus radiata</i>	15	Poor	Poor	2	Understory Live oaks are suitable replacements.
164	Monterey Pine <i>Pinus radiata</i>	15	Poor	Poor	2	Suppressed structure over understory Oaks. Moderate to low risk of failure.

<sup>1,2</sup>See Tree Health Evaluation

# Tree Survey

Tree No.	Species	Size @ 54"	Health Vigor	<sup>2</sup> Retention Rating	Priority Removal Year 1-2-3	Comments
165	Monterey Pine <i>Pinus radiata</i>	19	Fair/Poor	Poor	2	Suppressed structure over Live Oaks adjacent to walking trail.
166	Monterey Pine <i>Pinus radiata</i>	50	Fair/Poor	Poor	2	Corkscrew, arching, leaning slightly North adjacent to walking trail. Low risk of failure.
167	Monterey Pine <i>Pinus radiata</i>	18	Fair/Poor	Poor	1	5% live crown ratio. Leans moderately to South adjacent to walking trail. Moderate risk of failure.
168	Monterey Pine <i>Pinus radiata</i>	15	Fair/Poor	Poor	1	5% live crown ratio. Leans moderately to South adjacent to walking trail. Moderate risk of failure.
169	Monterey Pine <i>Pinus radiata</i>	13	Poor	Poor	1	5% live crown ratio. Leans moderately to South adjacent to walking trail. Moderate risk of failure.
170	Monterey Pine <i>Pinus radiata</i>	24	Fair/Poor	Poor	1	Leans moderately to South adjacent to walking trail. Moderate risk of failure.
171	Monterey Pine <i>Pinus radiata</i>	27	Fair/Poor	Poor	1	Leans moderately to South adjacent to walking trail. Moderate risk of failure.
172	Monterey Pine <i>Pinus radiata</i>	27	Poor	Poor	1	Leans moderately to West with bowing, corkscrewing structure. Moderate risk of failure.
173	Monterey Pine <i>Pinus radiata</i>	32	Fair/Poor	Poor	1	Leans moderately to South. Moderate risk of failure.
174	Monterey Pine <i>Pinus radiata</i>	28	Poor	Poor	1	Leans severely to West into parking. Cavity/sunken bark opposite side. High risk of failure.
175	Monterey Pine <i>Pinus radiata</i>	33	Fair	Poor	3	Reasonably fair condition suited to the near term. Understory Oaks.
176	Monterey Pine <i>Pinus radiata</i>	27	Fair	Poor	2	Leans moderately over drive.
177	Monterey Pine <i>Pinus radiata</i>	52	Fair	Poor	2	Leans moderately to South over drive.
178	Monterey Pine <i>Pinus radiata</i>	23/20/ 15/16	Fair	Poor	1	At top of hill increased exposure to winds. Shallow soils. Leans slight, to moderately over drive. Moderate risk of failure.
179	Monterey Pine <i>Pinus radiata</i>	13	Poor	Poor	1	In decline. Excessive pine cone production indicates late stage decline.
180	Monterey Pine <i>Pinus radiata</i>	41	Fair	Poor	2	Weakly attached co-dominant structure is prone to failure. Moderate risk of failure. Location is in low-use open space area.
181	Monterey Pine <i>Pinus radiata</i>	31	Fair	Poor	2	15% live ratio. In open space in low use area.

<sup>1,2</sup> See Tree Health Evaluation

# Tree Survey

Tree No.	Species	Size @ 54"	<sup>1</sup> Health Vigor	<sup>2</sup> Retention Rating	Priority Removal Year 1-2-3	Comments
182	Monterey Pine <i>Pinus radiata</i>	30/24	Fair	Poor	1	Grows on higher elevations above established Native Oaks. Removal benefits Oaks.
183	Monterey Pine <i>Pinus radiata</i>	28	Fair	Poor	1	Grows on higher elevations above established Native Oaks. Removal benefits Oaks.
184	Monterey Pine <i>Pinus radiata</i>	37	Fair/Poor	Poor	1	Grows on higher elevations above established Native Oaks. Removal benefits Oaks.
185	Monterey Pine <i>Pinus radiata</i>	36	Poor	Poor	1	Circling girdling roots. In decline. Located in parking area. Moderate risk of failure.
186	Monterey Pine <i>Pinus radiata</i>		Fair	Poor	3	Property boundary tree adjacent to home. Reasonably sound structure. Removal benefits 6" Oak at base.

<sup>1,2</sup>See Tree Health Evaluation

## Tree Health Evaluation

Several factors are involved in the evaluation process. Trees with a Health & Vigor Rating of *excellent* or *good* are likely to have lower priority concerns than those with a rating of *fair* or *poor*. Healthy, vigorous trees are better able to manage structural concerns and insect and disease attack than trees that are in poor condition. The tree Health & Vigor ratings below provide an initial guideline for evaluating tree health.

### <sup>1</sup>Health & Vigor Rating:

<b>Excellent</b>	A healthy, vigorous tree relatively free of signs and symptoms of disease.
<b>Good</b>	Tree with normal shoot elongation, interior dead wood, manageable twig dieback, and/or pest problems. Tree structure may influence considerations.
<b>Fair</b>	Tree with moderate amounts of twig and branch dieback, thinning canopy, reduced vigor, wounds that are slow to recover, with 65 to 80% of the canopy alive. May have poor branch structure and/or suppressed canopy. May have conditions that are manageable to improve tree health.
<b>Poor</b>	Tree with dieback of large limbs, large wounds with little callus growth, visible decay, and 30 to 60% of the canopy alive. Tree may also have dieback and decay in primary in scaffold limbs and/or trunk structure. May have large cavities and be structurally unsound beyond any reasonable management.

### <sup>2</sup>Retention Rating:

<b>Excellent</b>	Ideal specimen both functionally and aesthetically with good health and longevity.
<b>Good</b>	Tree suited to retention for the long term. Individual characteristics are weighed. Any health or structural concerns are manageable with reasonable care.
<b>Fair</b>	Tree may have age, health, and/or structural concerns that may, or may not be manageable. Aesthetics are likely to be affected or affect other more valuable trees. Removal may benefit others.
<b>Poor</b>	Tree is likely to be in decline and/or have non-manageable structural concerns. Removal is likely to benefit others.

#### 1. Tree Location, Structure and Competition

The location of the tree is considered with respect to the environment. Site frequency of use increases the concerns for structural deficiencies or trees in decline that might become a liability. Trunks and limbs are visually examined to evaluate structural defects and decay that could lead to breakage, or failure.

#### 2. Species Tolerance

Trees respond to environmental changes according to individual genetic ability. For example, Coast live oaks are more resistant to environmental changes than Valley oaks similar in size condition. Considerations also include tree age and longevity.

#### 3. Contribution

Contribution refers to the evaluation of individual, and/or grove characteristics to the site, neighborhood and benefits to the public. Factors also weigh the above Health/Vigor assessments and both function and aesthetic:

Functional considerations may include species, age and longevity, structure, stability and risks, benefits that include shade, screening and/or sun protection, wildlife habitat or ecological considerations, and the effects of competition.

Aesthetic considerations may include species importance, rarity or uniqueness, natural or exotic, visual interest including seasonal and structural features, appearance and placement in the environment.

### Terms used in this survey

**Topping** = The practice of removing whole tops of trees or large branches and/or trunks from the tops of trees, leaving stubs or lateral branches that are too small to assume the role of a terminal leader. This practice causes destructive and degenerative affects to tree health and structure that often results in limb failure of weakly attached secondary growth years after the initial injury.

**Co-dominant**= Two or more trees in close proximity equal (or near to) in size competing for dominance generally resulting in one-sided branching, or underdeveloped structure along facing portions of each tree and overextended branching on opposite sides. Co-dominant trees typically develop interdependency resulting in affects under a combination of conditions that predispose them to failure.

**Live Crown Ratio**= The relative proportion of green crown to overall tree height.



**Timothy C. Ghirardelli**  
CONSULTING ARBORIST

February 2, 2015

Unitarian Universalist Church of Berkeley

1 Lawson Road, Kensington, CA

**RE: ADDENDUM-Tree Management Survey**

I am retained by UUCB to provide this addendum to include the additional trees listed pursuant to the Tree Management Survey dated January 20, 2015. Trees cited scored a Retention Rating of Fair to Poor indicating these trees are not suited to the long term. My inspection occurred on 01.29.15.

<h1>Tree Survey</h1>						
Tree No.	Species	Size @ 54"	<sup>1</sup> Health Vigor	<sup>2</sup> Retention Rating	Priority Removal Year 1-2-3	Comments
197	River Red gum <i>Eucalyptus camaldulensis</i>	14-14	Fair	Fair-Poor	3	Moderate to heavy infestation of Weevils. Codominant structure on low-use hill top area.
198	River Red gum <i>Eucalyptus camaldulensis</i>	16	Fair	Fair-Poor	3	Weevils cited as above. Low use hill top area.
199	River Red gum <i>Eucalyptus camaldulensis</i>	20	Fair	Poor	3	Failed primary central leader. Remaining lateral structure leans west moderately. Interdependent canopy with #200.
200	River Red gum <i>Eucalyptus camaldulensis</i>	22	Fair	Poor	3	Failed leader with remaining lateral weakly attached and prone to failure.
201	River Red gum <i>Eucalyptus camaldulensis</i>	40	Fair	Poor	3	Within parking area. Recent pruning mitigates immediate concerns. Tree is in decline. Structure interdependent with #202.
202	River Red gum <i>Eucalyptus camaldulensis</i>	36	Good	Poor	3	Within parking area. Suppressed, moderately leaning structure to south with interdependent canopy to #200.

<sup>1,2</sup> See Tree Health Evaluation-Tree Management Survey



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