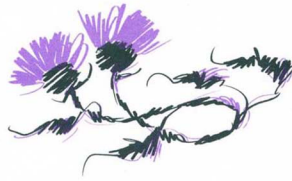


MACNAIR
&
ASSOCIATES
CONSULTING ARBORISTS AND HORTICULTURISTS



August 17, 2021

Matthew Ridgway
890 CoOp
890 Petaluma Blvd. North
Petaluma, CA 9

RE: 890 CoOp- Tree Inventory and Evaluation

Dear Mr. Ridgway,

According to your request, this report documents the trees growing on the commercial property at 890 Petaluma Blvd. North in Petaluma, CA.

The purpose of this evaluation is to:

- Assess the health and structural condition of trees growing within and adjacent to the project limits.
- Provide a preliminary assessment of the probable construction impact of the evaluated trees.

Site and Tree Summary Discussion:

The site is a commercial property located at the corner of Petaluma Blvd. North and West Payran Street. The topography is flat, with vacant buildings occupying the site. Sixteen (16) trees are evaluated as part of this report. Tree species occurring on the site are one (1) recently planted coast live oak (*Quercus agrifolia*) (street tree), four flowering crabapples (*Malus spp.*), six (6) pin oaks (*Quercus palustris*) (four are street trees), one (1) Raywood ash (*Fraxinus oxycarpa* 'Raywood'), and four (4) Eastern red oaks (*Quercus rubra*).

In Appendix A of this report, individual tree data, including health and structural ratings and suitability for preservation ratings. Also attached is a site drawing showing tree locations and numbers.

Health and Structural Condition:

The trees' general health and structural condition vary. Eight trees are rated as poor (suitability for preservation rating), three as fair, and five as moderate. Issues include chronic drought stress resulting in poor health and significant structural defects. Detailed observations are provided in Appendix A Tree Data Matrix.

Construction Impact:

The construction and grading/utility plans (Summit Engineering, May 2021) indicate significant potential impacts for all the trees (including the street trees). The drainage retention requirements for the site especially conflict with the retention of the trees.

In terms of street tree selection, large stature oaks in small sidewalk planter locations are not recommended. Ultimately the trees outgrow the available soil volume and become subject to chronic drought stress. Additionally, the larger trees are much more prone to causing sidewalk and infrastructure damage.

Individual Tree Evaluations

Following is a description of the various data used in the evaluations.

Tree #:

The trees are assigned a number as indicated on the Tree Location and Numbering Plan (GPS waypoint).

Common and Botanical Name (Species):

The botanical name and common name are provided for each tree.

Trunk Diameter (with Circumference) and # of Trunks:

Trunk diameter refers to the measurement of the trunk diameter at 54 inches above grade. The # of trunks notes single or multiple trunk trees. Trunks must occur at or below 54 inches above grade for a tree to be considered to have multiple trunks for measurement purposes. Trunk measurements may differ from those shown on the plans due to the method and date of measurement.

Height and Crown Diameters:

These fields are approximate measurements of the tree's height and crown spread. Accuracy is within plus or minus 10% of the indicated estimate.

Health and Structural Ratings and Descriptions:

The following chart describes the health and structural rating system used in the evaluation. It is a rating of relative conditions such as vigor, the extent of decay, structure, and insect or disease problems. Good and moderate ratings indicate limited structural problems, acceptable vigor, and an absence of significant pest or disease problems. Poor and marginal ratings indicate serious health or structural problems, especially if the tree is situated near structures or public areas. Trees rated as poor or marginal are often hazardous.

Rating Chart:

3.0	Moderate (or better) condition	Normal and correctable problems of structure or pests and diseases.
2.5	Fair condition	Typically indicates moderately low vigor and foliage density with limited branch or twig dieback. Significant but correctable structural defects may be present.
2.0	Marginal condition	Indicates serious problems with health, structure, decay, or significant insect or disease problems.
1.0	Poor condition	Indicates very poor health, vigor, or hazardous structural condition.

Trees may be rated between two conditions, such as 2.5 or 3.5, which indicates the tree does not precisely meet the criteria for either of the two categories and allows the rating system to be used as a continuum.

The comments and observations describe the basis for the health and structural ratings. The specific pests, diseases, and structural defects observed are described and identified, if possible.

This evaluation is of the above-ground structure only, and additional defects may exist at the root collar. Large mature and over-mature trees often require a root collar examination to evaluate the primary structural roots and root collar for decay and disease. In addition, an aerial inspection of the limb structure may be required.

Comments/Observations:

This is a summary discussion of the health and structural ratings and identification of any significant pest or disease issues or structural defects.

Suitability for Preservation Ratings:

Rating Factors:

Tree Health: Vigorous and healthy trees are better able to tolerate construction impacts, including root loss or injury,

Structural Condition: Preserved trees should be structurally sound or have defects that can be effectively abated in areas near structures or high-use areas.

Tree Age and Species: Older trees may have a reduced ability to tolerate construction impacts and adapt to changed site conditions. Additionally, individual tree species have varying tolerances to environmental impacts and changes.

Rating Scale:

Good: Trees in good health and structural condition with high potential for longevity.

Moderate: Trees in fair health and/or with structural defects that can be abated with treatment.

Fair: Trees in marginal health or structural condition that could possibly be mitigated or improved.

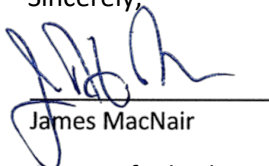
Poor: Trees in poor health and/or structural condition that probably cannot be effectively abated.

Protected Tree Status:

Protected status trees as defined by the City of Petaluma Ordinance (Chapter 17 Tree Preservation).

Please contact me if additional information is required.

Sincerely,

A handwritten signature in blue ink, appearing to read 'James MacNair', is written over a horizontal line.

James MacNair

ISA Certified Arborist WE-0603A
ISA Tree Risk Assessment Qualified
ASCA Tree and Plant Appraisal Qualified

890 Co-Op- Tree Evaluation Data- Appendix A
890 Petaluma Blvd. North, Petaluma

890 Co-Op Tree Evaluation Matrix

Health and Structural Rating Key: 3.0 = moderate or better condition

2.5 = fair condition

2.0 = marginal condition

1.5 = poor to marginal condition

1.0 = poor condition

**Suitability for
Preservation Ratings:**

Good: Trees in good health and structural condition with high potential for longevity.

Moderate: Trees in fair health and/or with structural defects that can usually be abated with treatment.

Fair: Trees in marginal health or structural condition that could possibly be mitigated or improved.

Poor: Trees in poor health and/or structural condition that probably cannot be effectively abated.

Tree #	Species	Trunk Diameter @4.5' (inches)	# of Trunks	Crown Height	Crown Diameter	Health Rating	Structural Rating	Comments/Observations	Protected Tree Status	Suitability for Preservation (Based on Condition)
1	Raywood ash (<i>Fraxinus oxycarpa</i> 'Raywood')	10	1	25'-30'±	20'-25'±	3.0	2.0	Two trunk structure forming at 6'. Closely spaced , multiple limb attachments a 12'. Vigor and foliage density are moderate.	No	Fair
2	red oak (<i>Quercus rubra</i>)	7	1	20'±	25'-30'±	3.0	2.5	Single trunk structure. No significant structural defects observed. Vigor and foliage density are moderate.	No	Moderate
3	pin oak (<i>Quercus palustris</i>)	11.5	1	25'-30'±	25'-30'±	3.0	2.5	Co-dominant trunk structure forms at 12'. Vigor and foliage density are moderate. Significant sidewalk displacement occurring from roots.	Street Tree	Moderate
4	pin oak	13	1	30'±	30'-35'±	3.0	1.5	Narrow, co-dominant trunk structure with seam and small fracture at trunk union. Vigor and foliage density are moderate.	No	Poor

890 Co-Op- Tree Evaluation Data- Appendix A
890 Petaluma Blvd. North, Petaluma

Tree #	Species	Trunk Diameter @4.5' (inches)	# of Trunks	Crown Height	Crown Diameter	Health Rating	Structural Rating	Comments/Observations	Protected Tree Status	Suitability for Preservation (Based on Condition)
5	pin oak	10.5; 11	2	35'±	30'±	2.0	2.0	Co-dominant trunk structure forming at 4'. Attachment is included with fissure present. Secondary included limbs present mid-crown. Vigor is low with significant branch dieback occurring.	Street Tree	Poor
6	red oak	3	1	15'±	8'±	2.0	2.5	Young tree in drought stress. Vigor is low with branch and twig dieback occurring.	No	Poor
7	coast live oak (<i>Quercus agrifolia</i>)	0.75	1	7'±	3'±	2.5	2.5	Young tree recently planted. No significant structural defects. Vigor is low from water stress.	Street Tree	Fair to Moderate
8	red oak	3	1	12'±	8'±	1.5	2.0	Young tree with very low vigor. Significant branch and twig dieback occurring. Lower trunk damage.	No	Poor
9	pin oak	6	1	18'±	20'±	2.5	2.0	Single trunk structure with wide crown form. Closely spaced, multiple limb attachments form at 6'. Moderately low vigor.	Street Tree	Fair
10	red oak	3	1	12'±	8'±	1.5	2.0	Young tree with very low vigor. Significant branch and twig dieback occurring. Lower trunk damage.	No	Poor
11	pin oak	10.5	1	25'±	20'±	2.5	2.5	Single trunk structure. No significant structural defects observed. Vigor and foliage density are moderate.	Street Tree	Moderate
12	pin oak	11.5	1	25'±	20'±	2.5	2.5	Single trunk structure. No significant structural defects observed. Vigor and foliage density are moderate.	No	Moderate
13	flowering crabapple (<i>Malus spp.</i>)	4	1	8'±	12'±	2.0	1.5	Semi-mature tree in drought stress. Trunk sunscald damage. Low vigor and foliage density.	No	Poor

890 Co-Op- Tree Evaluation Data- Appendix A
890 Petaluma Blvd. North, Petaluma

Tree #	Species	Trunk Diameter @4.5' (inches)	# of Trunks	Crown Height	Crown Diameter	Health Rating	Structural Rating	Comments/Observations	Protected Tree Status	Suitability for Preservation (Based on Condition)
14	flowering crabapple	5.5	1	10'±	7'±	2.0	1.5	Semi-mature tree in drought stress. Trunk sunscald damage. Low vigor and foliage density.	No	Poor
15	flowering crabapple	5.5	1	10'±	8'±	2.0	1.5	Semi-mature tree in drought stress. Trunk sunscald damage. Low vigor and foliage density.	No	Poor
16	flowering crabapple	6 (low)	1	8'±	10'±	3.0	2.5	Low branch structure with no significant defects. Moderately low vigor with good foliage density.	No	Moderate