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100 Callahan Way Tree Survey Report

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For Josh Plum

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Introduction

This report documents basic tree survey findings for 100 Callahan Way, a 4.07 acre vacant land area located inside the Town of Mammoth Lakes in Mono County, California. Inside you will find an interpretation of recently collected arboricultural and forestry data of current tree stand conditions. Although the 4 acres of 100 Callahan Way should be considered a mixed-conifer stand, which of course is typical of the Mammoth lakes area the dominant tree species on the lot is *Pinus jeffreyi* or Jeffery Pine. There are also small but relatively insignificant Lodgepole Pine (*Pinus contorta*) and White Fir (*Abies concolor*) populations on the property. While the Jeffery Pine is an iconic local tree species and while there are some fine large trees on this piece of land, there are no exceptional or old growth specimens

This report aims for a balanced, macro and micro view of the tree population while taking into consideration the imminent development of the lot. First a *General Forest Assessment* focuses on forest health and fuels. This assessment discusses important information regarding tree population size and age, as well as patterns of bark beetle infestation and other impacts. In addition to the GFA there is an identification 5 individual trees according to various attributes. There are 2 high quality trees identified and 3 hazard trees identified. No current tree policy for the town of Mammoth Lakes could be found which defines important categories of trees, thus commonly accepted definitions in Arboriculture or Forestry have been used.

General Forest Assessment

As mentioned previously, while the 100 Callahan lot should be considered a native Jeffery Pine forest stand, it is also a mixed conifer stand. All the trees are endemic to the Mammoth area. There are approximately 813 trees counted for this survey and the vast majority of trees are Jeffery Pine. Fir and Lodgepole exist only in small numbers and compose less than 5% percent of the forest stand. Although there are a hand-full of larger trees on this parcel (trees over 30"DBH), there are no old growth trees. The vast majority of the trees are between 10" and 24" DBH. At the time data for this survey was collected (1/16/2021), deep snow prevented dendrochronology measurements, thus tree growth factor information was taken from similar local sites. This places the stand of trees between 30 and 110 years old with the majority of the trees under 75 years old. Worth noting are a few living trees in the 150-200 year old range, or up to 39"DBH.

Fuels And Density

In the summer of 2017, the 100 Callahan property saw significant fuels reduction work. This work focused on reducing forest density with the removal of small and dead trees, to reach an approximate basal density of around 220 sq.ft./acre with an average of 15-20 feet of spacing between trees. This accounts for a average of 203 trees per acre which is still considered above maximum density for a post-thinned mixed conifer stand of this type. Today that is what can be found on this piece of property with many open areas of tree spacing over 60 feet. Lastly it should be noted that ladder fuels have been reduced with low-branch pruning throughout the stand.

Forest Health

In general forest health on the property can be considered fair to good. Although there are many healthy trees, the most important finding of this tree survey is a significant Jeffery Pine Beetle outbreak. It has become common with a property of this size to find bark beetles infesting localized areas. Sometimes there will be 2 or even 3 separate, small sites of acute outbreaks. However this property should be considered to have a systemic outbreak of Jeffery Pine Beetle as it is widespread. 203 trees were marked (painted with blue bands) and counted which have either already died or are currently green but beetle-infested with a 95% prognosis of fatality. This represents 28% of the total trees of the stand and does not include living trees that have evidence of an otherwise unsuccessful beetle attack. The extent of beetle infestation is troubling given the recent work done to thin the forest stand, which generally has a positive effect on forest health. Unfortunately this is part of a larger trend

of bark beetle infestation in the area. These infestations are largely the result of several variables including drought conditions, hot summers and successive warmer than normal winters, as they tend to target trees in a weakened condition. Lastly, and some-what insignificant, some trees were found to have suffered mechanical injury from various causes over the years.

Special Status Trees

This section focuses on 5 trees, which in this context deserve special status. Two trees are identified that although they do not necessary qualify as old growth or heritage trees, they are otherwise high quality specimens of Jeffery Pine. In addition 3 Hazard trees are also identified that should be considered high priority for removal. There are no Heritage Trees, Habitat Trees or other trees identified on the property otherwise deserving of special status.

High Quality Trees

Two trees are identified here as excellent specimens in relation to the other trees on the lot. Although these trees should not be considered exceptional, they are large and healthy, and would be appreciated in a new landscape if they could be retained. These trees have been marked on site with green flagging.

HQT#1

Species: Jeffery Pine (*Pinus jeffreyi*)

Size: 39"DBH x 90'

Approximate age: 177 yrs

Category: High Quality Tree

Interpretation: This healthy, balanced tree displays a full green crown. Although not an old growth tree, it is a fine example of a mature Jeffery Pine. It is one of the best examples on the lot.

HQT#2

Species: Jeffery Pine (*Pinus jeffreyi*)

Size: 39"DBH x 85'

Approximate age: 177 yrs

Category: High Quality Tree

Interpretation: This healthy tree displays a full green crown. Although not an old growth tree, it is a fine example of a mature Jeffery Pine. This tree is also one of the best examples on the lot.

Hazard Trees:

First, a word on Hazard Trees. These are living or dead trees that carry a higher risk of failure close to a human setting. A tree can only be considered a hazard if it has a target. This category is included due to the imminent development of the lot and it's boundaries with neighboring buildings and public infrastructure. Although beyond the scope of this survey, comprehensive and detailed hazard tree assessments for individual trees should be considered when they are located in highly trafficked or occupied human spaces. All trees marked with blue-painted bands should be considered hazard trees. In addition to these trees, 3 have been identified which should be given special consideration for removal. These trees are indicated on-site with orange flagging.

HZT#1

Species: Jeffery Pine (*Pinus jeffreyi*)

Size: 39"DBH x 85'

Approximate age: 180 yrs

Categories: Hazard Tree

Interpretation: This tree appears healthy yet has signs of decay in the bole. This tree should be

removed if the lot is developed.

HZT#2

Species: Jeffery Pine (*Pinus jeffreyi*)

Size: 41" DBH

Approximate age: 187 yrs.

Categories: Hazard Tree

Interpretation: This tree is large, dead, has a hollow low in the bole and a heavy lean towards the bike path. Due to these risk factors it should be removed in the near future.

HZT#3

Species: Jeffery Pine (*Pinus jeffreyi*)

Size: 29" DBH x 73'

Approximate age: 132 yrs.

Categories: Hazard Tree

Interpretation: This tree is large and dead. It has a heavy stem and is within striking distance to both the bike path and Dorrance St. It should be removed in the near future.

Recommendations

This section is included due to the imminent development of the property. The following recommendations are suggestions for maintaining a healthy, safe population of trees in the spirit of a community that values native green spaces.

1. **Beetle Infested Trees:** All of the trees marked with blue-painted bands should be considered hazardous and be removed regardless of the ultimate development plans with the lot. Not only are most these trees dead, many others are green but will be dead soon due to the bark beetle outbreak. The only practical control for arresting a beetle outbreak such as this is the removal of the trees. Chemical treatments, although effective on a small scale and perhaps useful for protecting individual trees, are costly, toxic and not practical on a larger scale. The removal of these trees will mitigate known, existing hazards and reduce fuels, as well as hopefully prevent or slow further forest stand damage.
2. **Hazard Trees:** Two trees (HZT#2, HZT#3), because of their size, condition and locations have been identified which are priorities for removal. Depending on timing of lot development, early removal should be considered.
3. **Replacement and Retained Trees:** In the spirit of the Town of Mammoth Lakes tree replacement policy for new developments, I would suggest maximizing green-space in the newly-established landscape while carefully choosing appropriate sites for new trees. As much as possible, native plant and tree species should be utilized. High quality and healthy existing trees should be retained whenever possible. Once a site plan is approved further recommendations can be made.
4. **Construction Suggestions:** As development plans for 100 Callahan move forward, I recommend the involvement of an ISA Certified Arborist familiar with Eastern Sierra trees throughout the planning and construction process. This professional can recommend tree buffers for construction, establish retained tree protection zones during construction, make detailed tree assessments, identify potential tree hazards and provide further recommendations for work such as pruning and tree care. Having a Certified Arborist working on the project will help preserve the health of retained trees, keep the community safe from tree hazards and eliminate potentially costly tree problems later down the road.

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