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## ARBORIST REPORT

Review of Douglas fir tree and sequoia tree  
Located at: 412 N Water St, Silverton  
Prepared for: City of Silverton

By: Robert Cornett  
ISA Certified Arborist #PN-6032A

Evaluation performed July 1, 2019

1. Definition of Assignment: Evaluate health of Douglas fir tree and sequoia tree as it pertains to potential new construction
2. Background History of Assignment: Trees have not been evaluated previously by our company.
3. Purpose of This Report: To identify potentially hazardous trees and advise on tree protection techniques in close proximity to new construction.

Hazardous trees are broken into four categories conducive to International Society of Arboriculture (ISA) standards.

<b>Failure Potential:</b>	1=low	2=medium	3=high	4=severe
<b>Size of Part:</b>	1=1<6"	2=6 – 18"	3=18 – 30"	4=>30"
<b>Target Rating:</b>	1=occasional use	2=intermittent use	3=frequent use	4=constant use
<b>Hazard Rating:</b>	Low=0-3	Medium=4-6	High=7-9	Severe=10-12



Tree #	Species	DBH (Diameter as measured at Breast Height)	Failure Rating	Size of Part	Target Rating	Hazard Rating
1	<i>Pseudotsuga menziesii</i> Douglas fir	45"	1	4	1* (change to 3 if new construction within target)	6 (or 8 if new construction within target)

**Observations:** Tree appears to be in excellent health, no visible failures, vigor rating is high, foliage appears normal, no noted pests, relative crown size appears normal, interior branches rated between normal and dense, crown appears mostly balanced, minimal (but normal) dead twigs, no apparent cracks or weak attachments, trunk healthy

**Recommend:** Recommend lightly raising by removing lower lateral limbs for clearance and removing deadwood 2" or larger.

Tree #	Species	DBH (Diameter as measured at Breast Height)	Failure Rating	Size of Part	Target Rating	Hazard Rating
2	<i>Sequoiadendron giganteum</i> Sequoia	68"	1	4	1* (change to 3 if new construction within target)	6 (or 8 if new construction within target)

**Observations:** Tree appears to be in excellent health, no visible failures, vigor rating is high, foliage appears normal, no noted pests, relative crown size appears normal, interior branches rated between normal and dense, crown appears mostly balanced, minimal (but normal) dead twigs, no apparent cracks or weak attachments, trunk healthy

**Recommend:** Recommend lightly raising by removing lower lateral limbs for clearance and removing deadwood 2" or larger.



## Hazard Rating Explanation

### *The Overall Risk Rating and Action Thresholds*

<i>Risk Rating</i>	<i>Risk Category</i>	<i>Interpretation and Implications</i>
3	Low 1	Insignificant - no concern at all.
4	Low 2	Insignificant - very minor issues.
5	Low 3	Insignificant - minor issues not of concern for many years yet.
6	Moderate 1	Some issues but nothing that is likely to cause any problems for another 10 years or more.
7	Moderate 2	Well defined issues - retain and monitor. Not expected to be a problem for at least another 5 - 10 years.
8	Moderate 3	Well defined issues - retain and monitor. Not expected to be a problem for at least another 1 - 5 years.
9	High 1	The assessed issues have now become very clear. The tree can still reasonably be retained as it is not likely to fall apart right away, but it must now be monitored annually. At this stage it may be reasonable for the risk manager/owner to hold public education sessions to inform people of the issues and prepare them for the reality that part or the entire tree has to be removed.
10	High 2	The assessed issues have now become very clear. The probability of failure is now getting serious, or the target rating and/or site context have changed such that mitigation measures should now be on a schedule with a clearly defined timeline for action. There may still be time to inform the public of the work being planned, but there is not enough time to protracted discussion about whether or not there are alternative options available.
11	High 3	The tree, or a part of it has reached a stage where it could fail at any time. <b>Action to mitigate the risk is required within weeks rather than months.</b> By this stage there is not time to hold public meetings to discuss the issue. Risk reduction is a clearly defined issue and although the owner may wish to inform the public of the planned work, he/she should get on with it to avoid clearly foreseeable liabilities.
12	Extreme	This tree, or a part of it, is in the process of failing. <b>Immediate action is required.</b> All other, less significant tree work should be suspended, and roads or work areas should be closed off, until the risk issues have been mitigated. This might be as simple as removing the critical part, drastically reducing overall tree height, or taking the tree down and cordoning off the area until final clean up, or complete removal can be accomplished. The immediate action required is to ensure that the clearly identified risk of harm is eliminated. For areas hit by severe storms, where many extreme risk trees can occur, drastic pruning and/or partial tree removals, followed by barriers to contain traffic, would be an acceptable first stage of risk reduction. There is no time to inform people or worry about public concerns. Clearly defined safety issues preclude further discussion.

The Table shown above outlines the interpretation and implications of the risk ratings and associated risk categories. This table is provided to inform the reader about these risk categories so that they can better understand any risk abatement recommendations made in the risk assessment report.

**WE RECOMMEND THAT YOU PLACE THIS TABLE IN ALL OF YOUR RISK REPORTS.**



## New Construction Recommendations

Trees should be protected from construction damage to maximize health, safety, functionality and benefits. Tree protection involves activities to preserve and protect tree healthy by avoiding damage to tree roots, trunk, or crown. Site development planning prior to site disturbance should include identifying tree protection zones (TPZs) for all tree designated for retention. Each tree has a critical root zone (CRZ) The International Society of Arboriculture (ISA) defines CRZ as an area equal to 1-foot radius form the base of the tree's trunk for each 1 inch of the tree's diameter at 4.5 feet above grade. An alternate rule of thumb is to use the tree's dripline to estimate the CRZ. We recommend choosing whichever provides the larger CRZ.

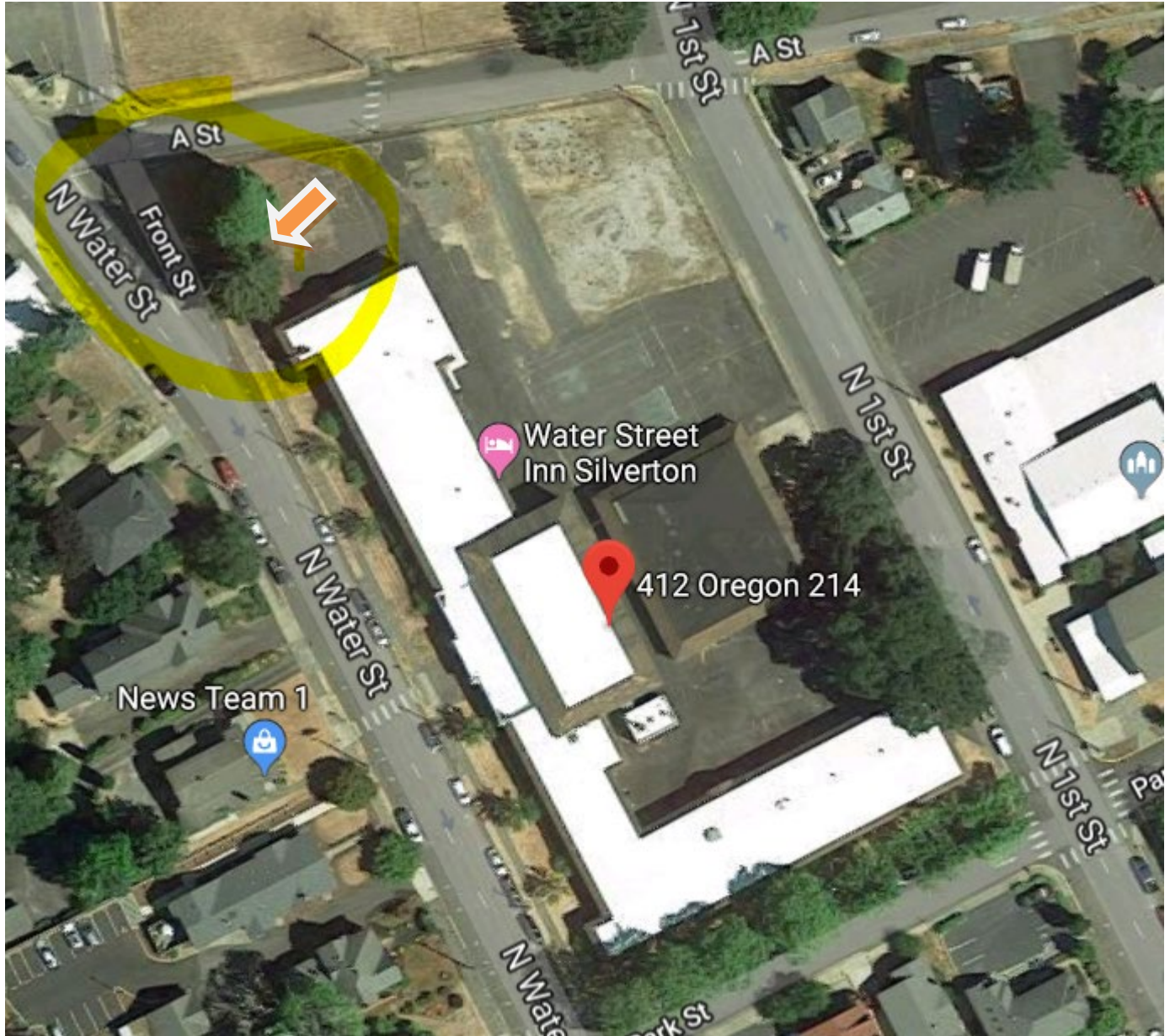
Alternately we recommend removing trees within 10 feet of proposed new construction, as well as trees that cannot be adequately protected.

If it is determined the trees are to be retained, and due to the significant size and maturity of the fir and sequoia as assessed in this report, we recommend the following checklist as it pertains to new construction:

- Establish a CRZ as measured 1.5 times the dripline of each tree
- Install strong fencing around the CRZ and allow the fence to remain in place for the life of the development project
- Post appropriate signage to convey the importance of the CRZ to workers
- Avoid cutting tree roots over 4 inches in diameter
- Use sharp tools to cleanly cut tree roots, never tear with a backhoe -sharp cuts encourage good wound closure and confines the spread of decay
- DO NOT do the following within the fenced CRZ zone:
  - stockpile construction materials, soil or demolition debris
  - park vehicles or equipment which can compact soil
  - trench for utilities installation
  - change soil grade by cutting or filling
  - contaminate soil from washing out equipment
  - wound or break tree trunks or branches through contact with vehicles/heavy equipment
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We recommend that an ISA certified arborist place the fencing and signage prior to new construction. Any root cutting should be observed and/or performed by and ISA certified arborist as well.

Location Map (orange arrow points at trees)



## Proposed New Construction – Option #1



Proposed New Construction – Option #1

