

Scaling Fire Wisdom

LA 485 Senior Capstone Project | Jarin Manuel



Project Goals



Strengthen

- Knowledge of fire-wise planting
- Defensible landscaping

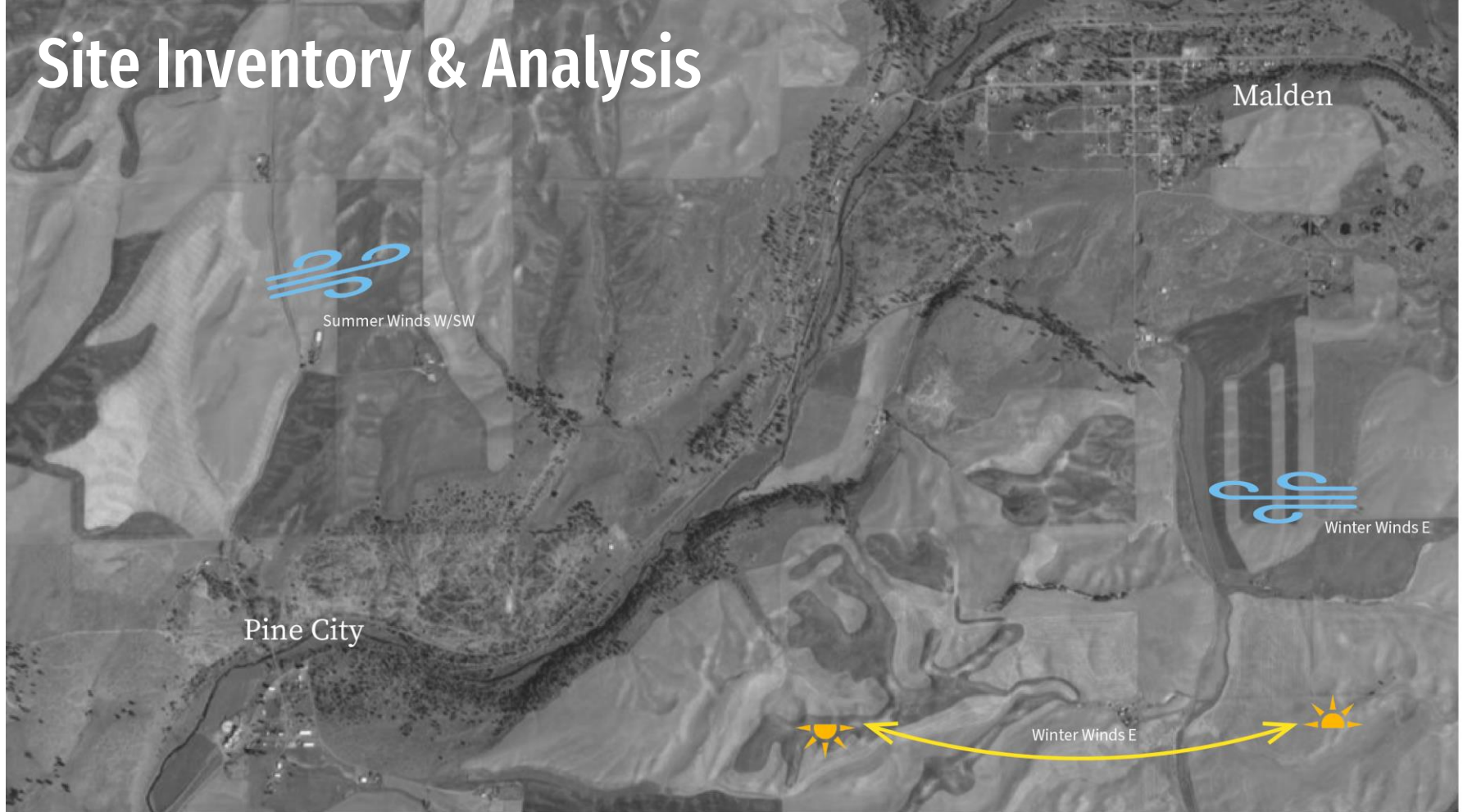
Proportion

- What does fire-wise planting look like at a regional, city, and personal scale

Vicinity Maps



Site Inventory & Analysis



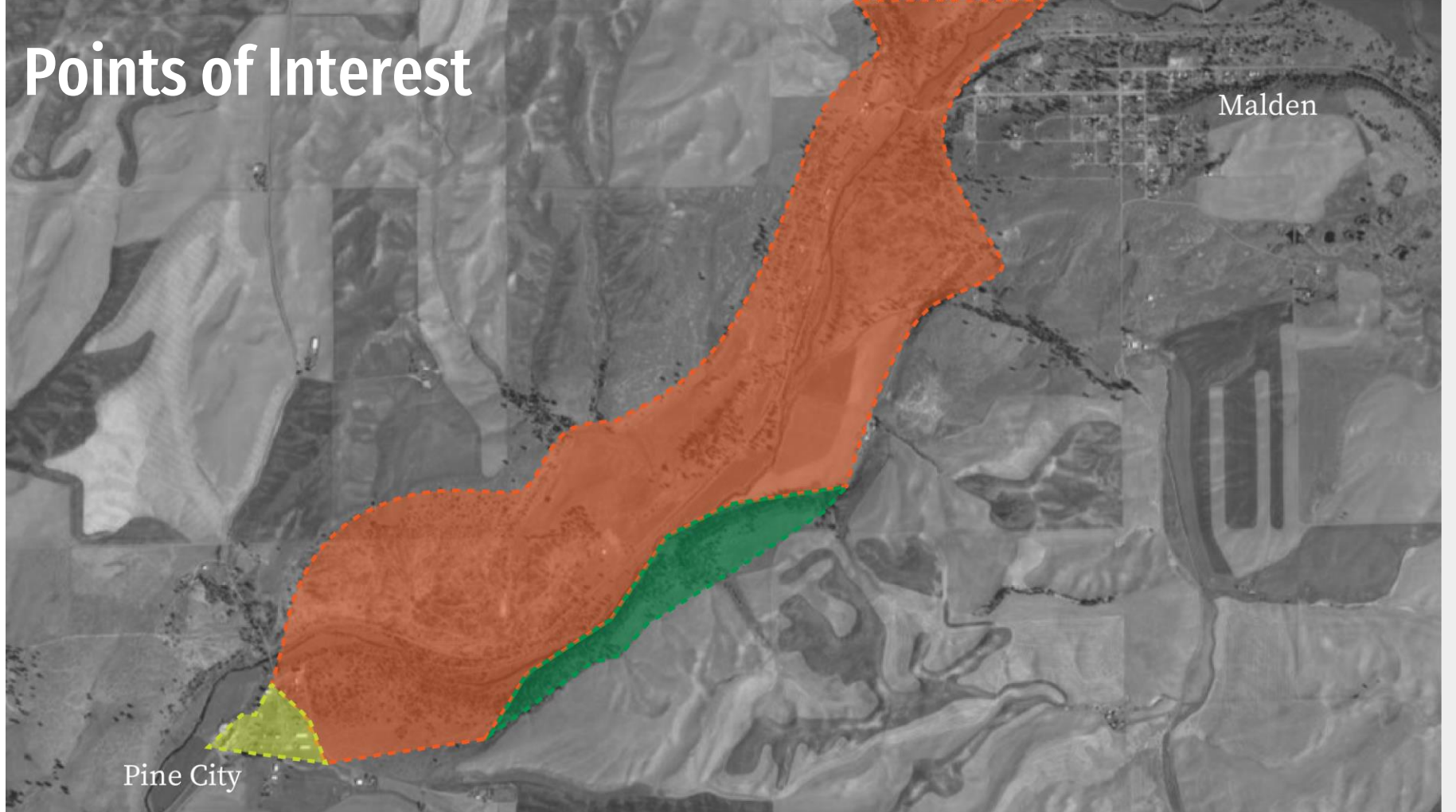
Annual Temperatures High: 84°F (July)
Low: 24°F (January)

Annual Rainfall: 18"

Annual Snowfall: 30"



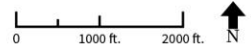
Points of Interest



Malden

Pine City

-  Large: Firebreak Locations
-  Medium: Firebreak Examples
-  Small: Firewise Demonstration Garden



Where to Implement Firebreaks?

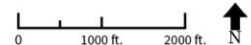
Malden

Firebreaks perpendicular to summer wind direction

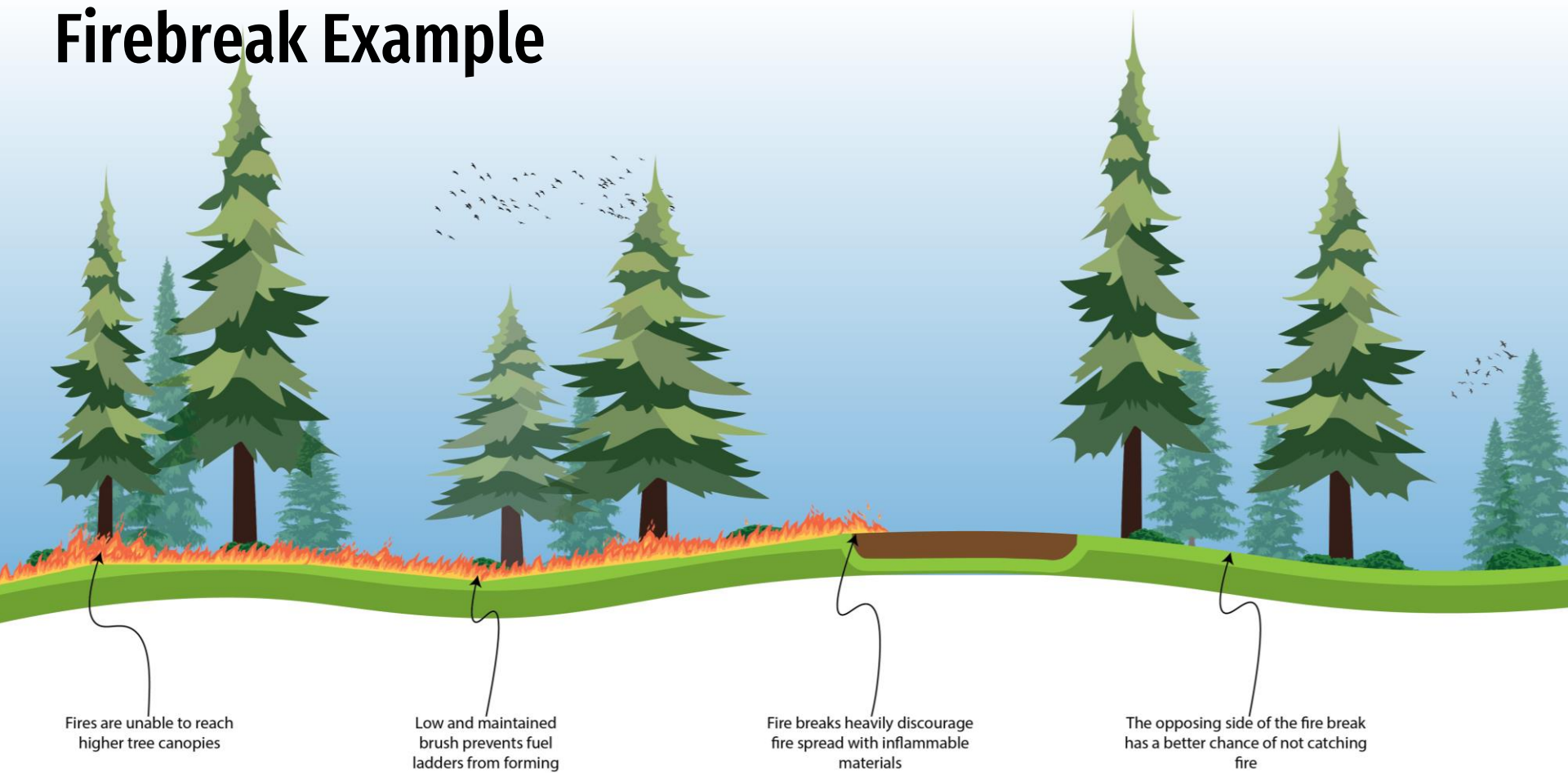
Pine City

 Pre-Existing Fire Ladder from Malden to Pine City

 Proposed Forest Firebreak Locations



Firebreak Example



Tree Canopy Diagram

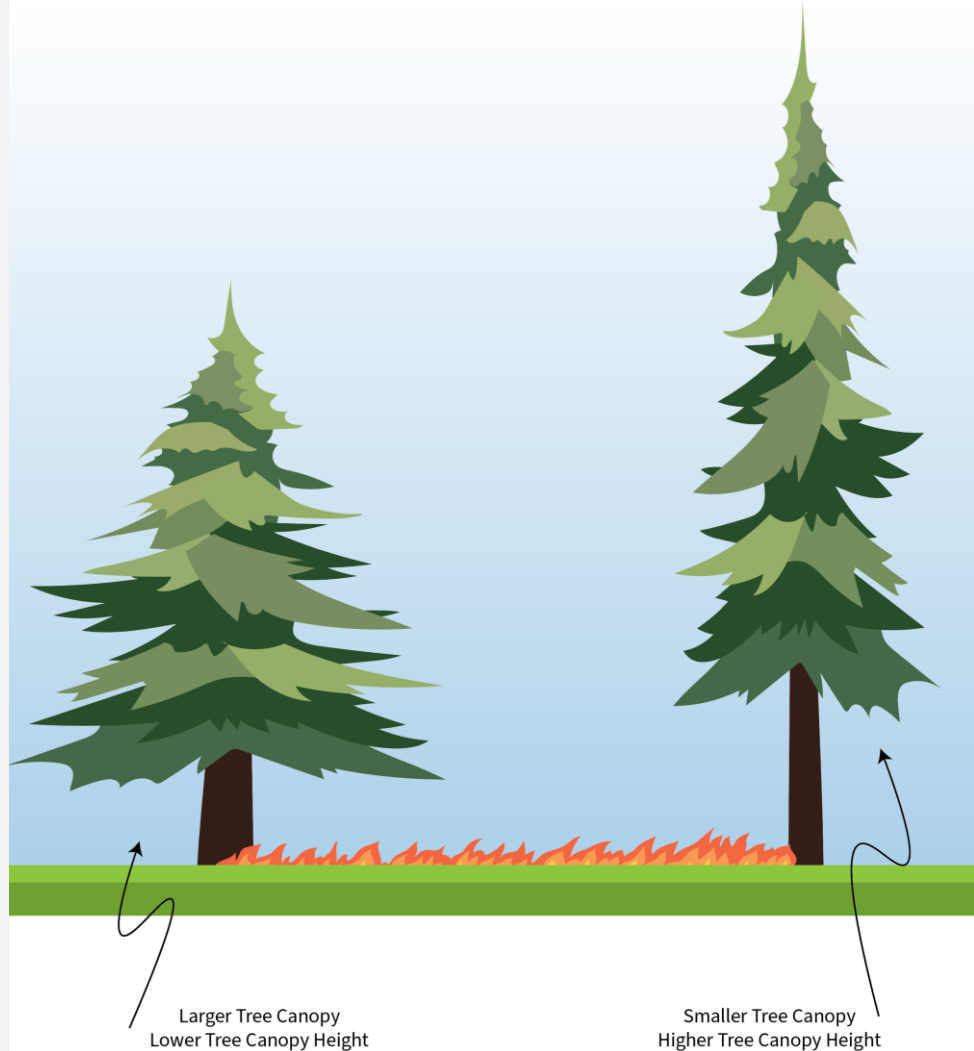
Tree canopies have a large effect on how fire spreads in wildlands.

Larger tree crowns make trees wider.

- If a canopy is touching another tree, fire can spread easily.

Tree crown height refers to the distance between the ground and the bottom of the tree canopy.

- Taller canopies such as Ponderosa Pine are great at avoiding low spreading fires.



Tree Canopy Spacing



Proper spacing between tree canopies discourages fire spread between trees

DO

- Fire has a harder time jumping in proper spacing
- Well maintained underbrush prevent fire spreading vertically

Tree Canopy Spacing



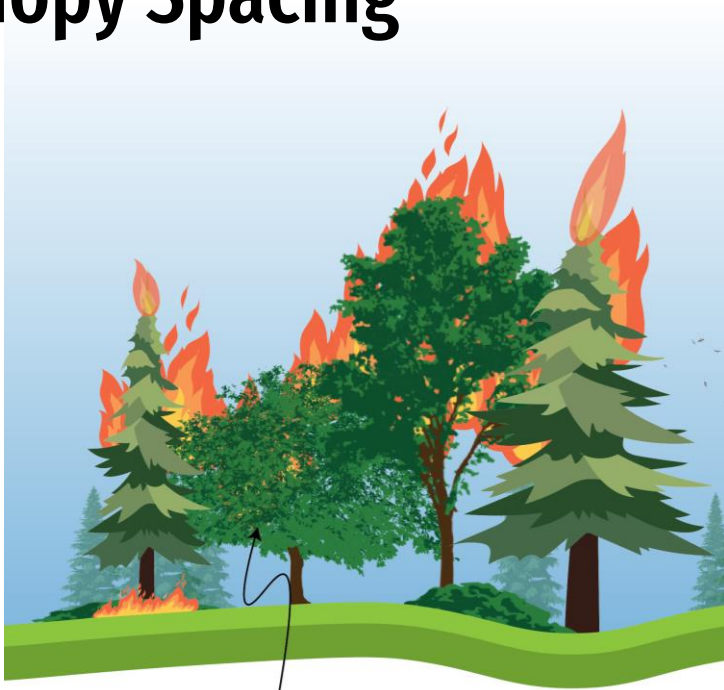
Tight clusters of trees allow fire to hop from tree to tree with no trouble

High tree density leads to more leaf litter and creates a bed of fuel

DON'T

- Tight clusters of trees will burn quickly and intensely
- Strong fires will scorch the earth more easily and make future growth tougher

Tree Canopy Spacing



Even with good spacing, mixing species changes overall canopy structure and can spread fire easily

DON'T

- Different tree species have different canopies
- Even with proper spacing, with various species, fire can spread

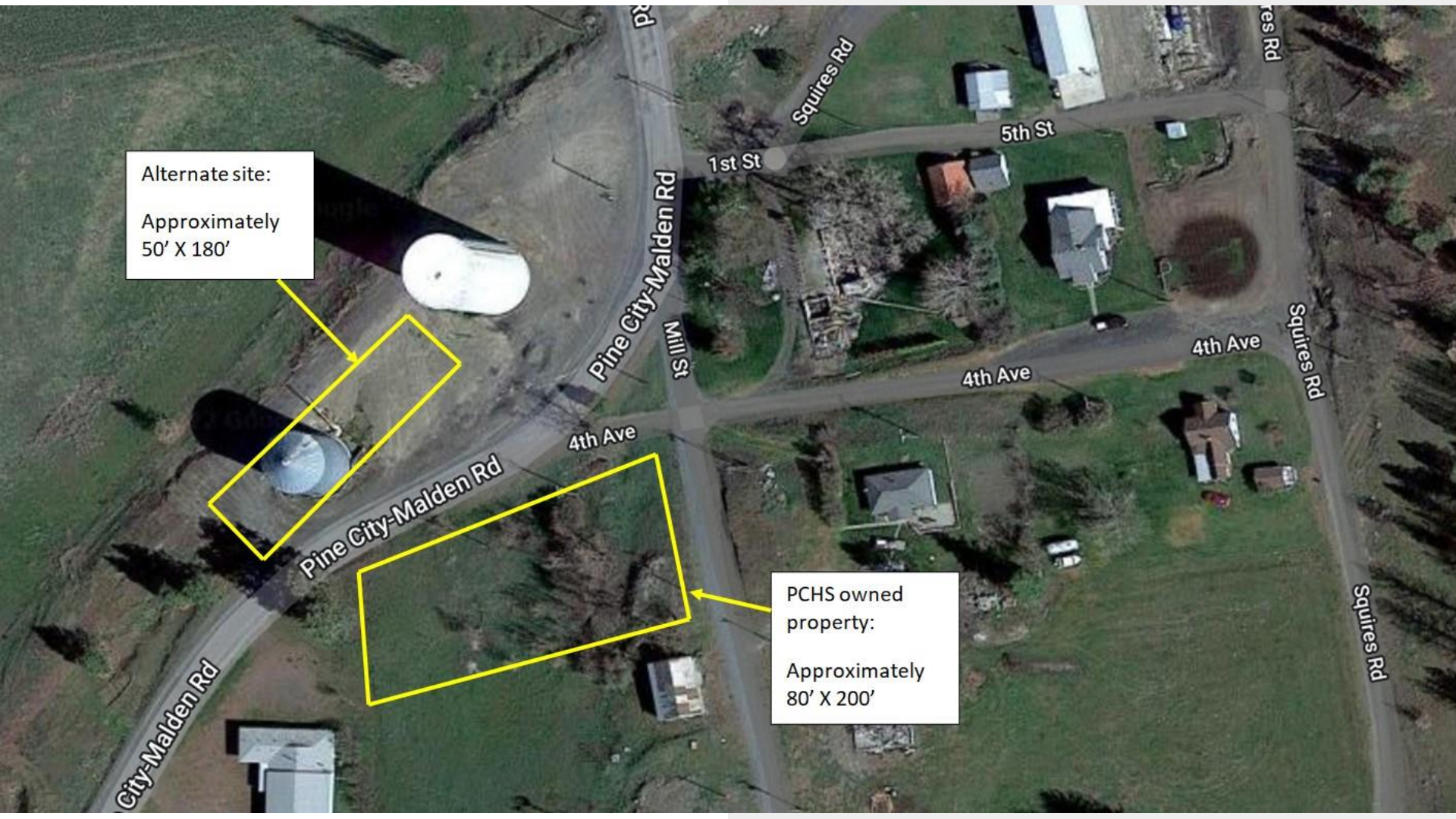
Alternate site:

Approximately
50' X 180'



PCHS owned
property:

Approximately
80' X 200'





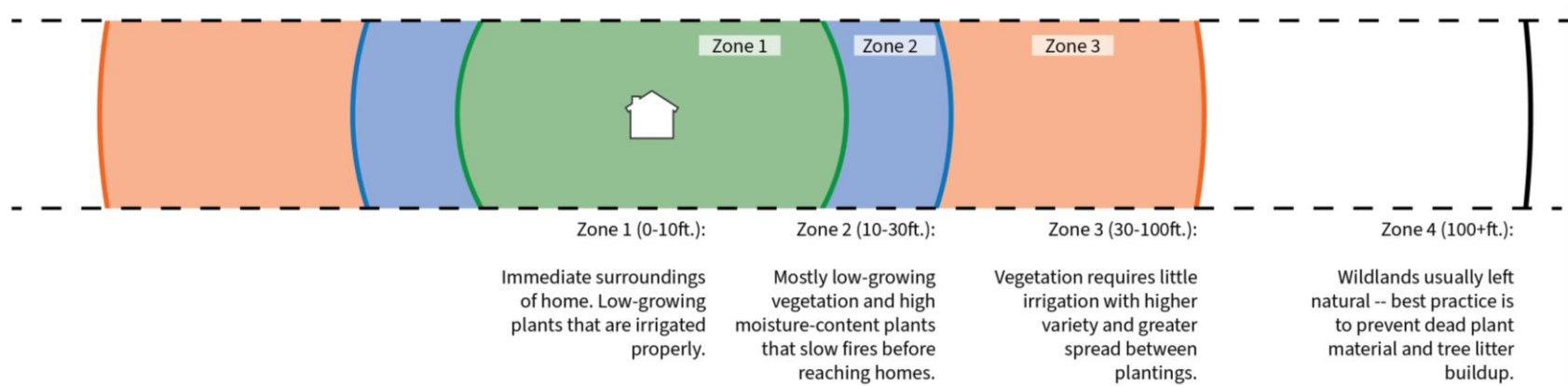
Potential Demonstration Garden

- Different zones can attribute to various kinds of plants
- Benefits from low-water usage and low maintenance vegetation

Key

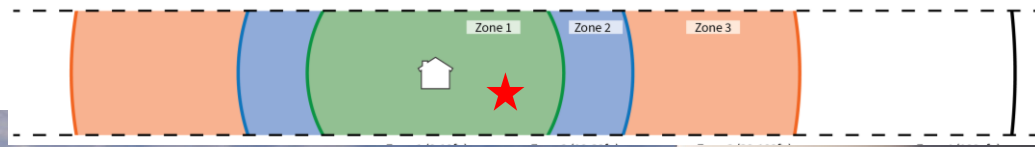
1. Garden Entrance
2. Proposed Train Depot Building
3. Zone 1 Planting Area / Open Lawn
4. Zone 2 Planting Area
5. Zone 3 Planting Area
6. Firescape Landscaping Informational Kiosk
7. Proposed 3' Fence

Vegetation Zoning Diagram

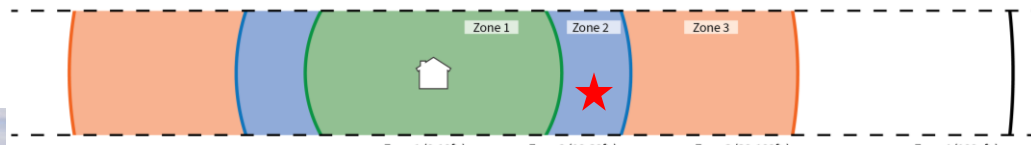


Vegetation density and variety differ greatly depending on positioning in reference to a building's zones. As plants grow closer to defensible spaces, the level of maintenance must also change. Proper prevention is extremely important to stopping and/or slowing wildfires.

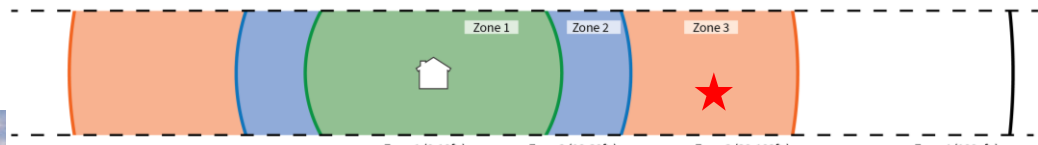
Perspective Examples



Perspective Examples



Perspective Examples



Thank you!