**Mixed Conifer (Ponderosa Pine/Douglas-fir) Treatment Comparison**

|  |
| --- |
| Objectives:* Reduce the severity and intensity of a wildfire within the urban interface.
* Restore ponderosa pine/mixed conifer stands toward their characteristic species composition, structure, and spatial patterns in order to increase resistance and resiliency to future natural disturbance.
* Initiate fuel reduction treatments in preparation for future prescribed broadcast burn opportunities.

Indicators:* Flame length, rate of spread, fireline intensity, torching index, crowning index, fire type, and fuel hazard rating.
* Acres treated to restore species composition, stand structure and spatial arrangement in ponderosa pine/mixed conifer dominated stands.
* Acres effectively treated to re-introduce fire on the landscape.
 |
|  | **Manual** | **Mechanical** | **Untreated** |
| **Appropriate Treatments****Guidelines:*** Average Size of Trees to be Cut
* Topography
* Amount of Rock in Unit
* Amount of Perennial and Intermittent Streamcourses
* Road Access
* Legal Access (number of needed easements)
* Amount of Temporary Road Construction to Access Unit
* Cost
 | Thinning (trees <10” DBH)2” – 7” DBHSlopes > 35%> 30% of Treatable GroundMoreAverage existing road accessFlexibility0 MilesLess Expensive | Thinning (trees < 14” DBH)7” – 12” DBHSlopes < 35%< 30% of Treatable GroundLessGood existing road accessLimited< 4 MilesMore Expensive | NANANANANANANANANA |
| **Outcomes/Results Vegetation:*** Treatment
* Stand Structure
* Cover Type (Potential Change)
* Ponderosa pine regeneration potential
* Roads
 | ~ 25% existing basal area removalIntermediate and overstory tree size classes represented with some understory; limited stand perpetuation into the future. Minimal crown gaps between individual and groups of treesModerateLowExisting | ~ 40 - 50% existing basal area removalAll tree size classes represented with adequate growing space and tree perpetuation into the future. Greater crown gaps between individual and groups of treesHighHighImproved existing and temporary roads | 0% existing basal All tree size classes represented with crowded growing space. Shade tolerant species begin/ continue to dominate site. Minimal crown gaps between individual and groups of treesModerate (short term, high long termLowNA |
| **Outcomes/Results Fuels:*** Fuel Treated
* Piles/Lop & Scatter
* # of Piles
* Pile Size
* Piled Material
 | Surface, ladderHand; Lop & Scatter25+ piles/ac6’x 6’ to10’ x 10’ < 6 inches | Surface, ladder, crown Machine ~5 piles, one landing/20 ac10’x 10’ to 20’ x 20’ ~95% activity | NANANANANA |
| **Outcomes/Results Prescribed Burning:*** # of Piles to Burn
* Need for Another vegetation Treatment Before Fire Re-introduction
* Fuel Preparation (Surface Fuels to Carry Fire).
* Resilience to Wildfire Post-treatment
 | HighMediumLow to MediumMedium | LowLowLow to MediumHigh | NAHighNALow |
| **Outcomes/Results Wildfire Behavior:*** Flame Length
* Rate of Spread
* Fireline Intensity
* Torching Index
* Crowning Index
* Fire Type
* Fuel Hazard Rating
 | LowHighMediumLow LowSurface/CrownModerate | LowHighLow LowLowSurfaceModerate | HighHighHighHighHighSurface/CrownHigh |
| **Outcomes/Results Suppression Strategy:*** Line Construction Efficiency
* Retardant Effectiveness
* Structure Protection (Private Land w/ D-Space Completed
* Structure Protection (Private Land w/ D-Space Not Completed
* Structure Protection (Access to Structure w/ NFS Lands Fuels Mitigation)
* Structure Protection (Access to Structure w/out NFS Lands Fuels Mitigation)
 | MediumMediumMedium/HighLowMediumNA | HighHighHighLowHighNA | LowLow/MediumLow/MediumLowNALow |
| **Outcomes/Results Aesthetics:*** Visual Impact (Cut)
* Visual Impact (Piles)
* Pile Longevity
* # of Large Tree Retention
* Presence of Invasive Weeds
 | MediumHighOne Winter season cure timeHighMedium | HighMediumOne Winter season cure timeMediumHigh | LowLowNAHighLow/Medium |
| **Outcomes/Results Wildlife:*** Habitat Structural Stage (Potential Change)
* Habitat Tree Species Diversity (Potential Change)
* Understory Species Tree/Shrub/Grass Diversity
* Horizontal Structure (Downed Wood)
* Snag Retention
 | LowLowMediumLow/MediumHigh | HighHighHighLowMedium | NANAMediumHighHigh |