

**Trapper Fuels Reduction Project
Statement of Work and Request for Proposals
Fuels Reduction Implementation Contractor
Yuba River Ranger District - Tahoe National Forest, California**

Background and Statement of Work

The National Forest Foundation (NFF) and the USDA Forest Service (USFS) are working together to protect and restore the Tahoe National Forest through targeted efforts in the NFF's Tahoe Headwaters Treasured Landscape site. In 2022, the NFF and the Yuba River Ranger District (YRRD) of the Tahoe National Forest are collaborating on the 1,308-acre Trapper Fuels Reduction Project. The Trapper Fuels Reduction Project is designed to reduce fuel loads around the rural community of Camptonville, improve forest health and resilience, and generate enhanced stream flow. The implementation contractor will collaborate with the oversight forester, YRRD and the NFF to implement forest health treatments across the project area.

Information Requested

If interested in this project, please provide a bid for the above statement of work by providing approach, timeline, staffing expectations, work experience, and cost. Please also include your capacity for this project and efficiency in designing, preparing, and overseeing forest health and fuel reduction projects in the past, if any.

This is a request for proposals only and quotations furnished are not offers. This request does not commit the National Forest Foundation to pay any costs incurred in the preparation of the submission of the quotation or to contract for supplies or services.

General Specifications

- (a) Description of Work – This Request for Proposals is for mastication and hand thinning work on the Trapper Fuels Reduction Project including the following:

Item 1

Item 1a - Hand thin/hand pile or lop/scatter treatments on up to 10" DBH

Item 1b - Mechanical mastication treatment on up to 14" DBH

Item 1c - Fire Line Construction Around Units

Item 2

Item 2a - Hand thin/hand pile or lop/scatter treatments on up 10" DBH

Item 2b - Fire Line Construction Around Units

The full Scope of Work can be found in APPENDIX E – Service Work Items. Each work item is organized into its own section within the appendix then broken down into unit-by-unit guidance.

The Contractor shall identify which efforts and materials they can supply in terms of materials, labor, equipment, supplies, supervision, quality control, and incidentals required to complete the work described. The Contractor shall perform all work in a safe and conscientious manner.

- (b) Project Location - The project is located on the Yuba River Ranger District of the Tahoe National Forest. The Trapper Fuels Reduction Project extends approximately 3.5 miles south of the community of Camptonville and continues north along State Route 49 and northeast along Pliocene Ridge, ultimately converging at Goodyears Bar. The majority of the project area is located within Sierra County, with only the westernmost portions of the project area located in Yuba County.
- (c) Work Schedule - Work will commence as early as August of 2022 and run year-round (weather permitting) until March 2025. Anticipate delays each summer and fall for Project Activity Level (PAL) days where limited work is allowed. Snow cover and wet ground will most likely prevent hand or equipment work during the winter months (November – May). All work must be completed by March 2025.

Pricing Schedule

Contractor shall price work according to the schedule below. Please provide a separate cost for either the Trapper Fuels Reduction Hand Thin/Mastication (Item #1 a/b/c) OR the Trapper Fuels Reduction Hand Thin/Hand Pile (Item #2 a/b). If interested in both, provide a cost for all line items.

<u>Trapper Fuels Reduction Hand Thin/Mastication</u>	Quantity	Unit Cost	Total Cost
Item 1a - Hand Thin/Hand Pile or Lop/Scatter	358.68 (Acres)		
Item 1b – Mastication	440.95 (Acres)		
Item 1c – Fire line construction around unit	24.26 (miles)		
<u>Trapper Fuels Reduction Hand Thin/Hand Pile</u>	Quantity	Unit Cost	Total Cost
Item 2a - Hand Thin/Hand Pile or Lop/Scatter	568.26 (Acres)		
Item 2b – Fire line construction around unit	20.22 (miles)		

Other Project Requirements and Specifications

- (a) Utilities – In many locations there will be no or limited sanitation, water, electrical or housing services available. The Contractor shall make its own arrangements for temporary facilities if needed. The NFF Representative will assist the contractor in identifying a camping area near the project site if spiking is the desired option.
- (b) Specifications – Project work shall be accomplished in accordance with the following:
 - APPENDIX C – General Project Maps
 - APPENDIX E – Schedule of Items and Specifications
 - APPENDIX H – Fire Plan

Contractor Qualifications

- (a) References – Please provide three references.
- (b) Past Experience – Please provide a brief explanation of previous work experience with land management agencies.

Insurance Requirements

Upon selection of the winning bid, chosen contractor will be asked to affirm that it has and shall maintain State minimum workers' compensation insurance coverage for its employees, if any. The selected contractor shall also maintain broad form general liability, property damage, and automotive liability insurance in the minimum amount of \$1,000,000 for bodily injury, death, or damage to property of any person and \$2,000,000 for bodily injury, death, or damage to property of more than one person. The Contractor shall name NFF an Additional Named Insured and provide NFF with documentation evidencing such coverages.

Performance Security

If the contract awarded will be over \$250,000 the chosen contractor shall post cash, a letter of credit, bond, or other financial security that is easily convertible into cash in a form acceptable to the NFF in its sole determination in the amount of 5% of the amount due to contractor, not to exceed \$50,000 dollars, to assure completion of the work required under this Agreement and payment of all amounts lawfully due to all persons supplying or furnishing to the Contractor or Contractor's subcontractors with labor, laborers, materials, rental machinery, tools or equipment used or to perform the work. As work is completed in integrated component parts, inspected, approved and, if applicable, conveyed to NFF, the Performance Security shall be released in a proportional amount, unless a lesser amount of release is necessary to maintain 5% Performance Security.

Project Tour

NFF and the USFS will host a project tour to help interested contractors better understand the project and field any questions. This tour will be conducted on August 2, 2022. Plan on meeting at the Yuba River Ranger District (15924 CA-49, Camptonville, CA 95922) at 10am. Please send an email to cclark@nationalforests.org before July 29 if you would like to be included on the tour. Though not required, attending the tour is strongly recommended if you plan to submit a proposal.

Bid Submission

Submit bids via email to cclark@nationalforests.org by **August 19, 2022 by 5PM PST**.

Contractor Selection Process

The NFF will use the Evaluation Factors below to review each submitted bid. Based on the outcomes of that selection process, the NFF will notify successful and unsuccessful bidders within 10 business days of the bid closing date and will prepare a separate contract document.

Point of Contact

For questions about the details of producing the bid, please contact:

Carson Clark
National Forest Foundation, California Program Forest Supervisor – Tahoe Area
530.247.5632
cclark@nationalforests.org

Evaluation Factors and Relative Importance

Level 3 Criteria

- Price / cost
- Contractor capability
- Timing of when contractor can begin and/or finish the project
- Past performance, references, and USFS feedback

Level 2 Criteria

- Technical proposal / proposed approach to project
- Overall strategic benefits to meeting NFF goals and grant needs, requirements, and timelines

Level 1 Criteria

- Benefits to the local community
- Relationship to local community

Equal Opportunity Provider

In accordance with Federal law and U.S. Department of Agriculture policy, the National Forest Foundation is prohibited from discriminating on the basis of race, color, national origin, sex, age, religion, political beliefs, or disability.

APPENDIX C

Trapper SFEP Units Overview

- Trapper Boundary
- CA Spotted Owl PAC
- Northern Goshawk PAC

Trapper STS Final

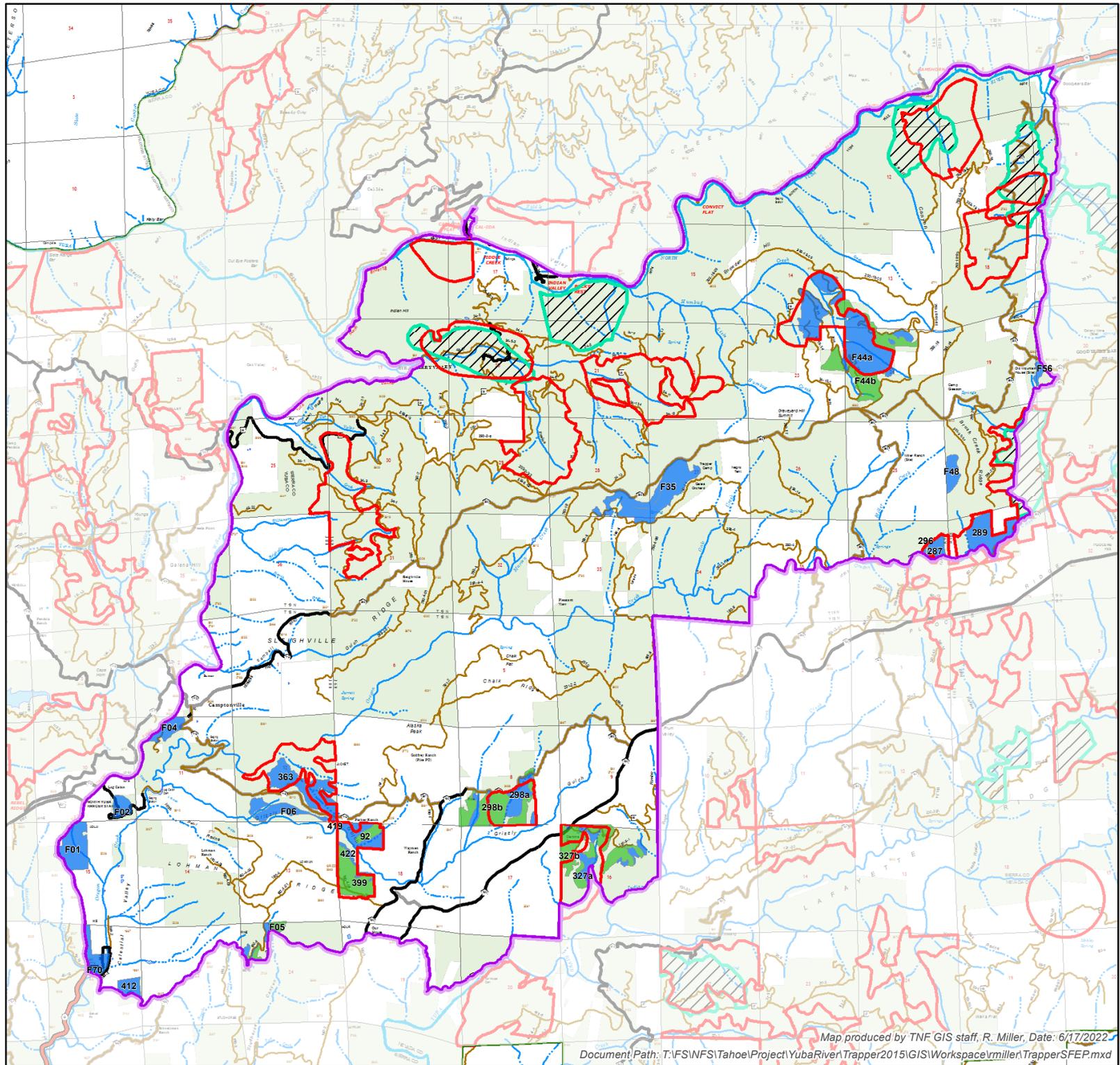
- HC
- Mastication
- Interstate and US Highway
- State Highway
- Paved Road
- Dirt Road
- County Road
- Intermittent
- Perennial
- Tahoe NF
- Other/Private

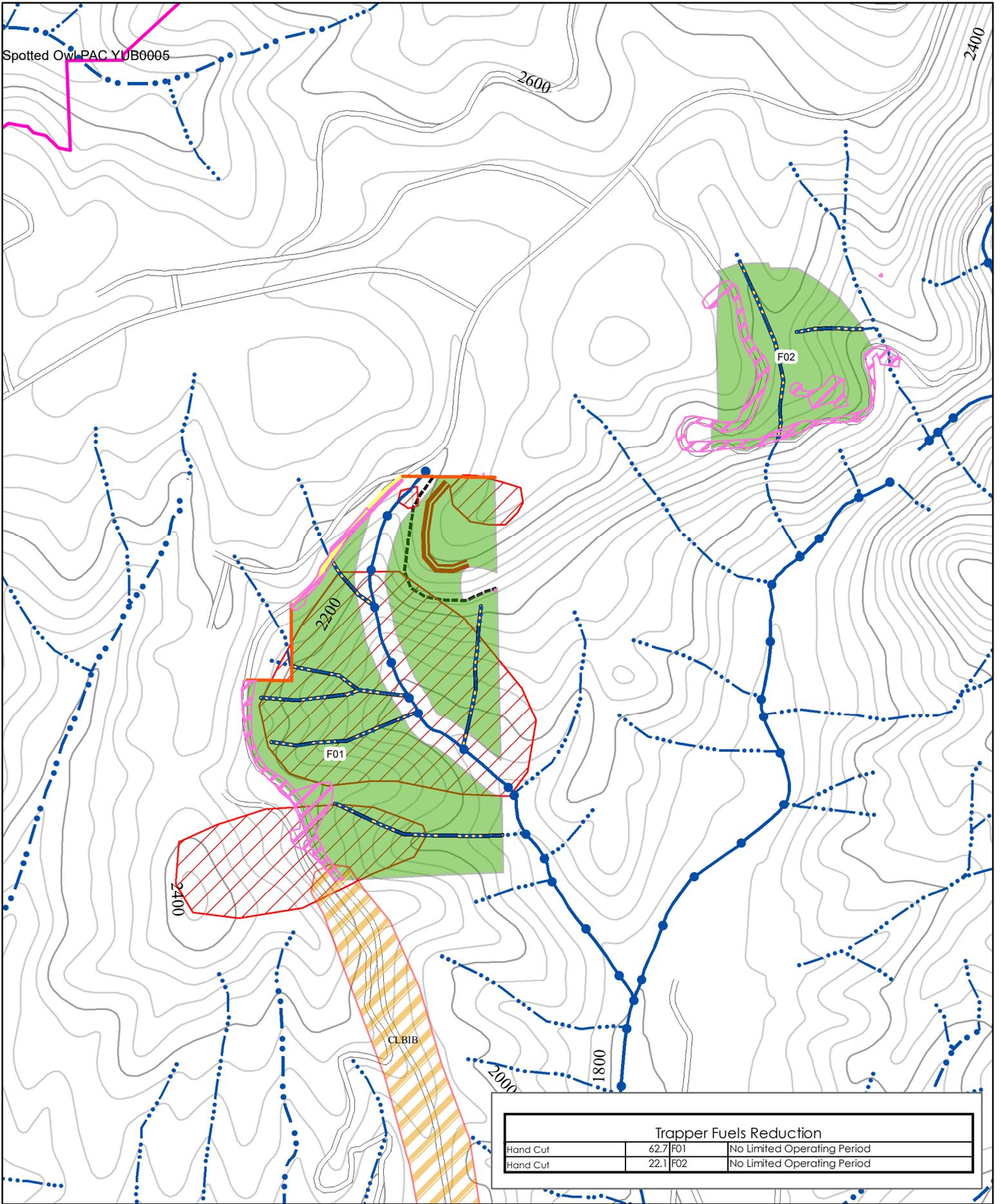


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Forest Service
Tahoe National Forest
Yuba River Ranger District



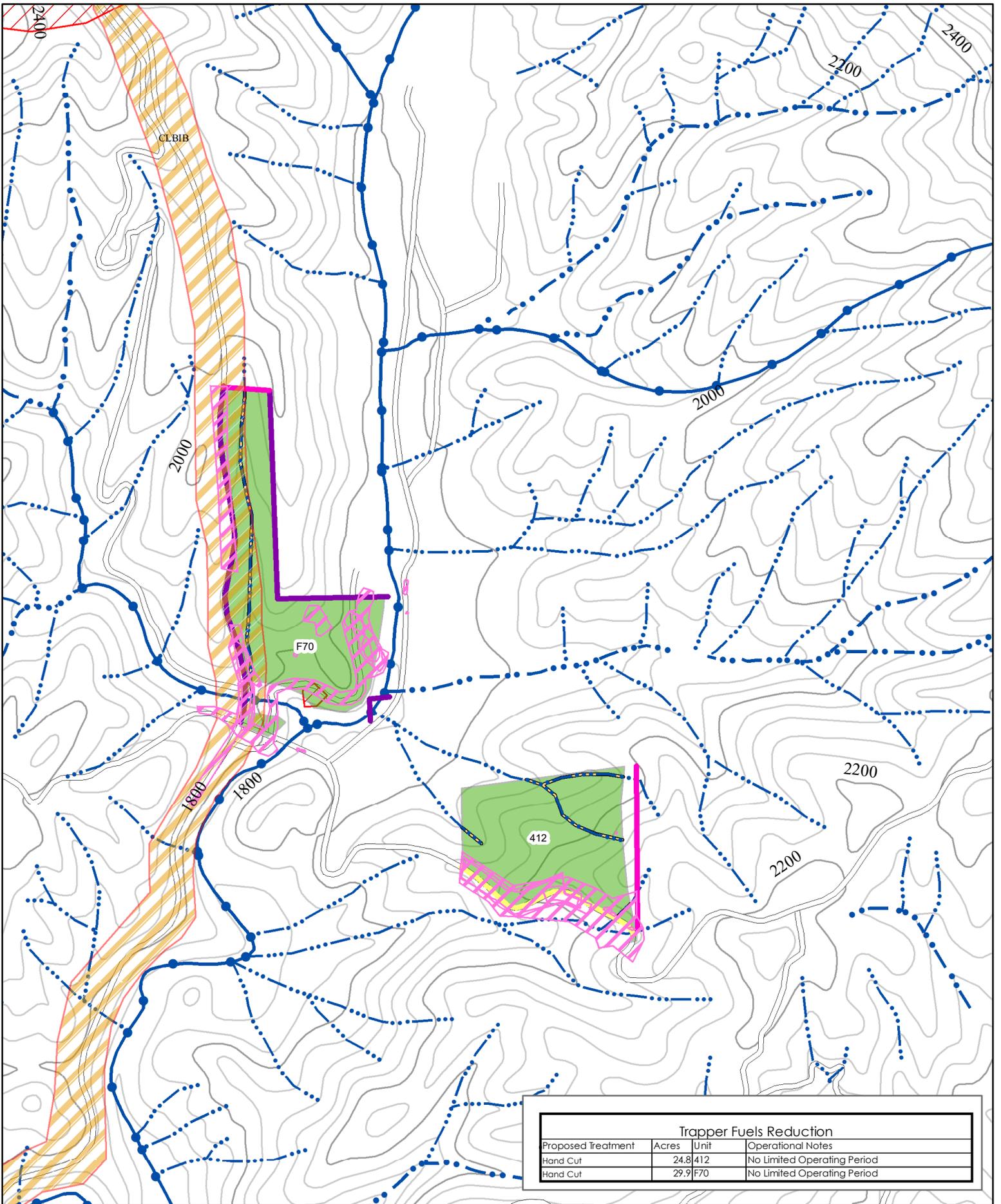


Trapper Fuels Map 1

- Trapper Fuel Treatment Virtual Boundary
- Hand Cut
- Invasives
- Special Status Plants
- Virtual
- Line not in
- Watercourse
- Perennial
- Ephemeral
- Ephemeral Buffer
- Hand Cut Buffer
- Arc
- Arc
- Designated Trails
- CSO PAC YRRD
- QUAD



1 inch = 790 feet

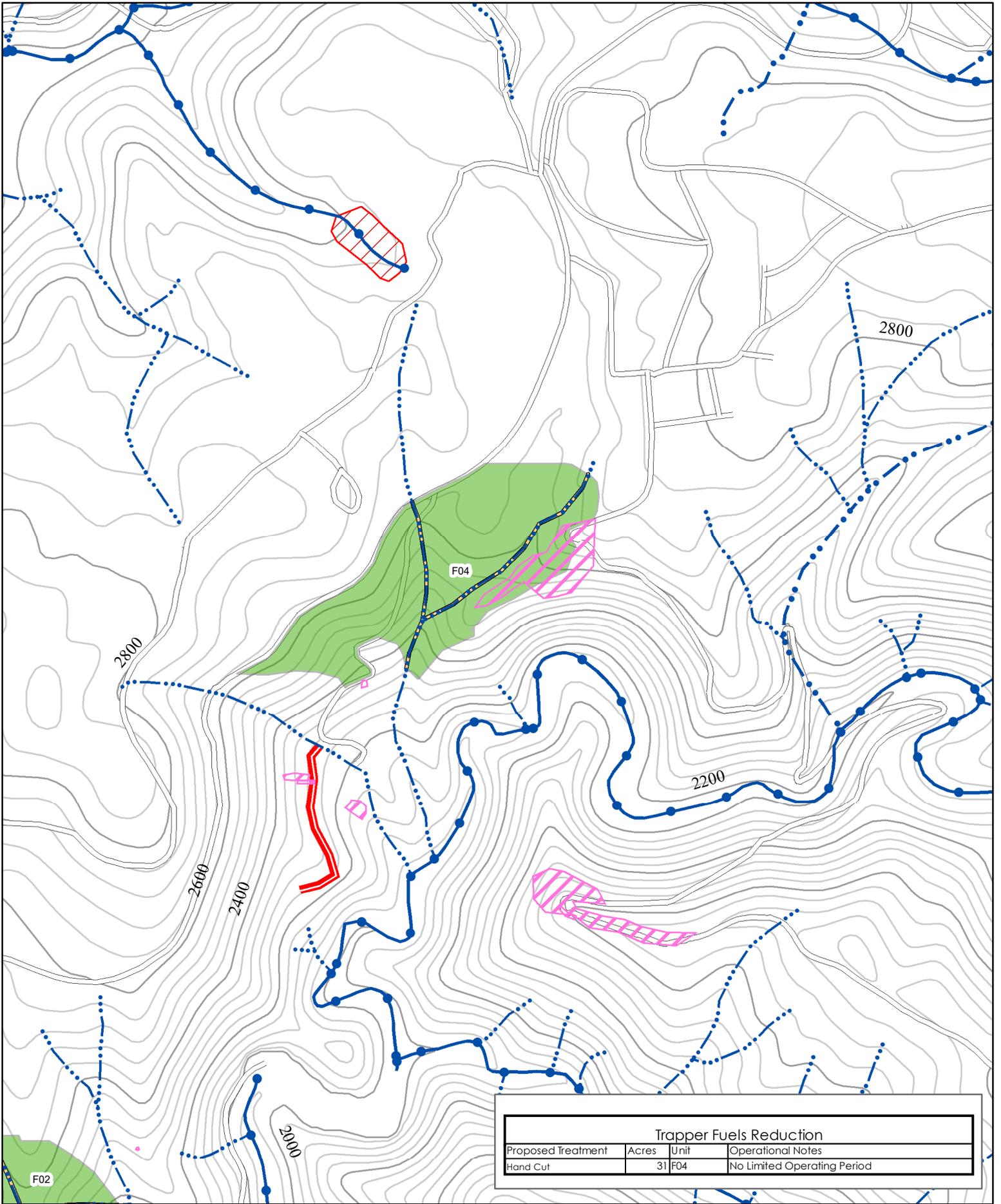


Trapper Fuels Map 2

- | | | | |
|-------------------------------|-----------------------------|--------------------|-------------------------|
| Trapper Fuel Treatment | Virtual Boundary | Watercourse | Ephemeral Buffer |
| Hand Cut | Virtual | Intermittent | Hand Cut Buffer |
| Invasives | Line not signed, corners in | Perennial | Arc |
| Special Status Plants | Line not signed, no corner | Ephemeral | |



1 inch = 910 feet

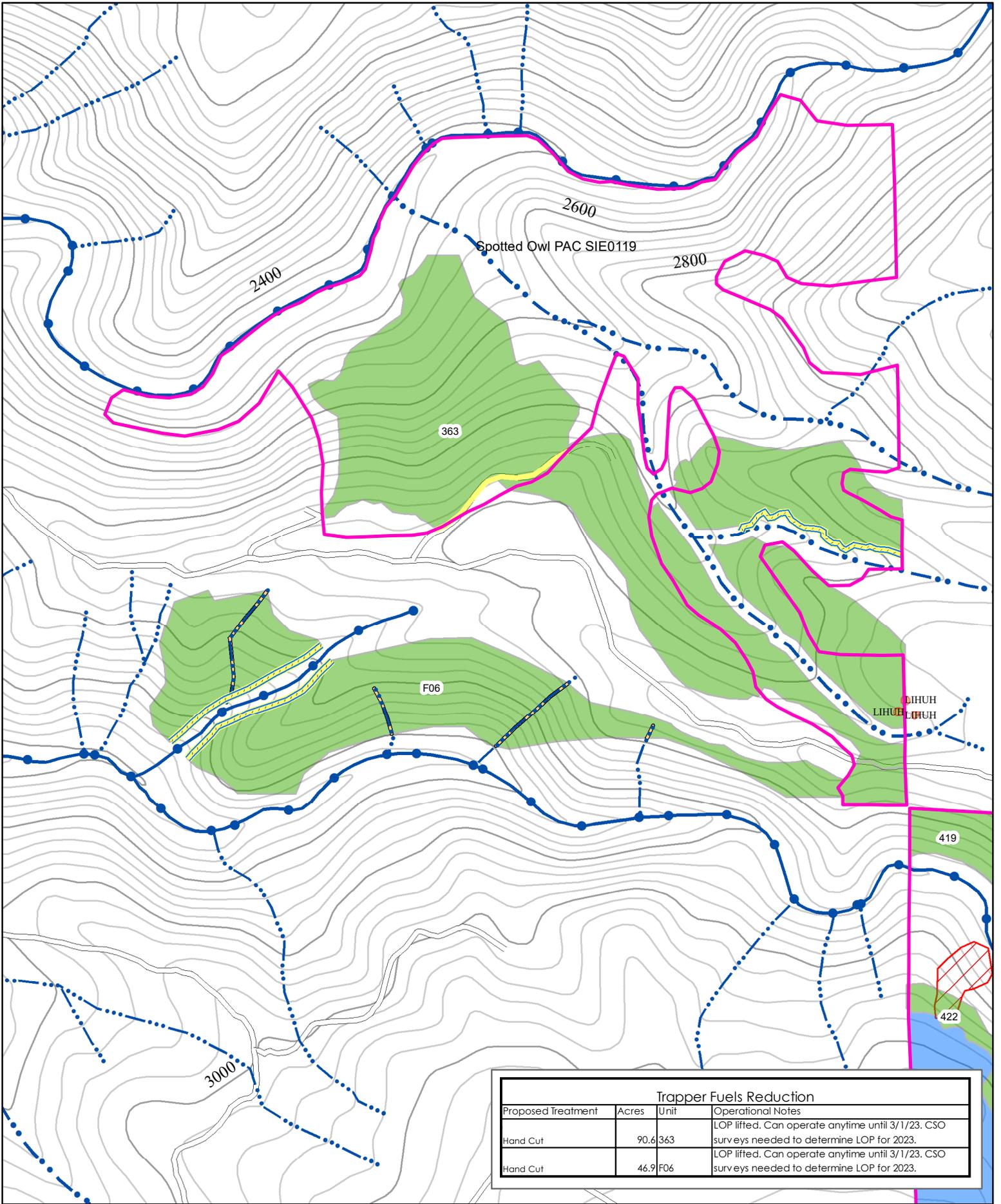


Trapper Fuels Reduction			
Proposed Treatment	Acres	Unit	Operational Notes
Hand Cut	31	F04	No Limited Operating Period

Trapper Fuels Map 3

- Trapper Fuel Treatment
 - Hand Cut
 - ▨ Invasives
 - Perennial
 - ⋯ Ephemeral
 - Intermittent
- Watercourse
 - Perennial
 - ⋯ Ephemeral
 - · - Intermittent
- Arc
 - ▨ Arc
 - ▨ Arc
- Hand Cut Buffer
 - Hand Cut Buffer

1 inch = 750 feet

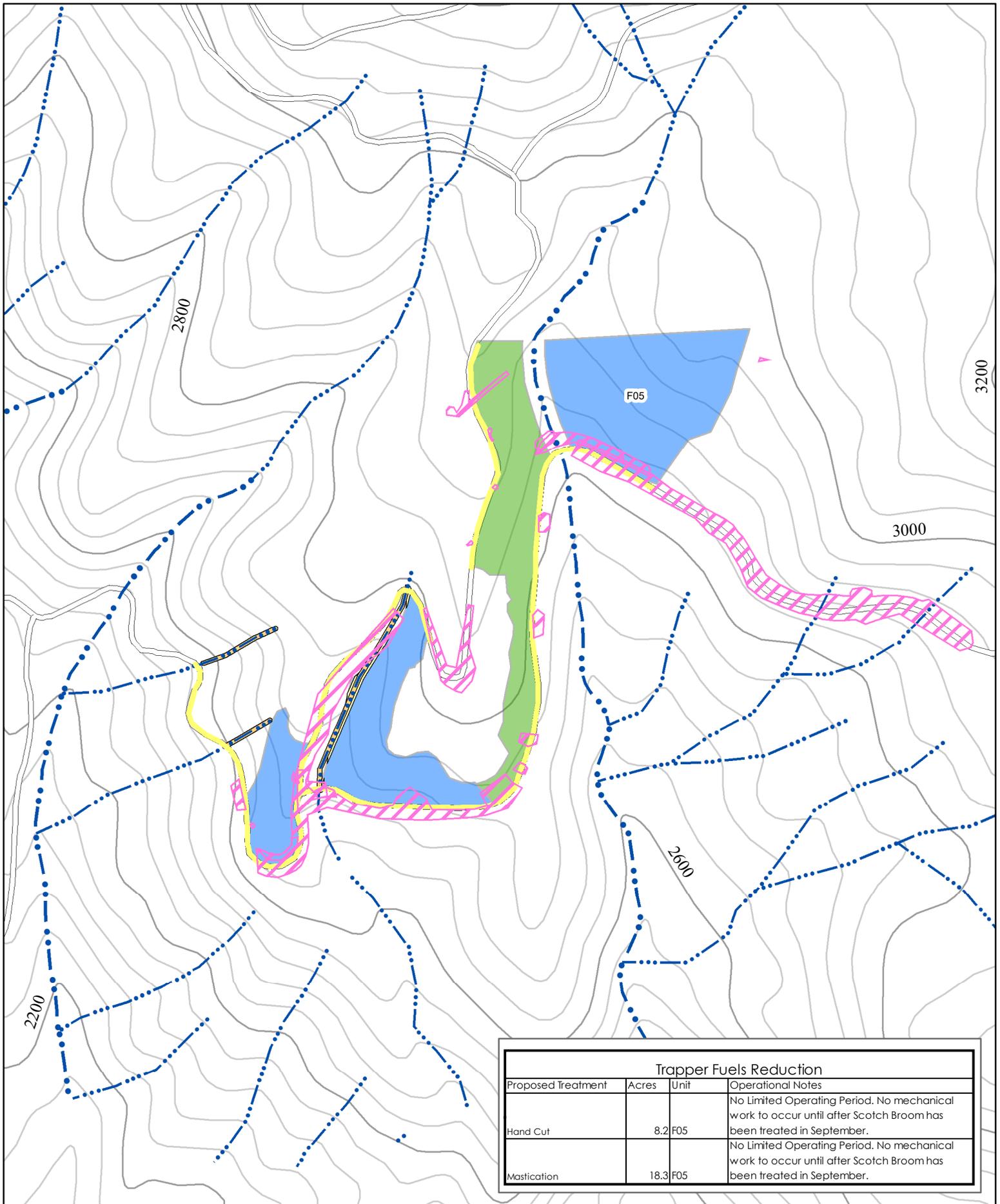


Trapper Fuels Map 4

- Trapper Fuel Treatment Virtual Boundary
- Hand Cut
- Mastication
- Special Status Plants
- Virtual
- Virtual/WLPZ
- Watercourse
- Perennial
- Ephemeral
- Ephemeral Buffer
- Hand Cut Buffer
- CSO PAC YRRD
- Arc



1 inch = 760 feet

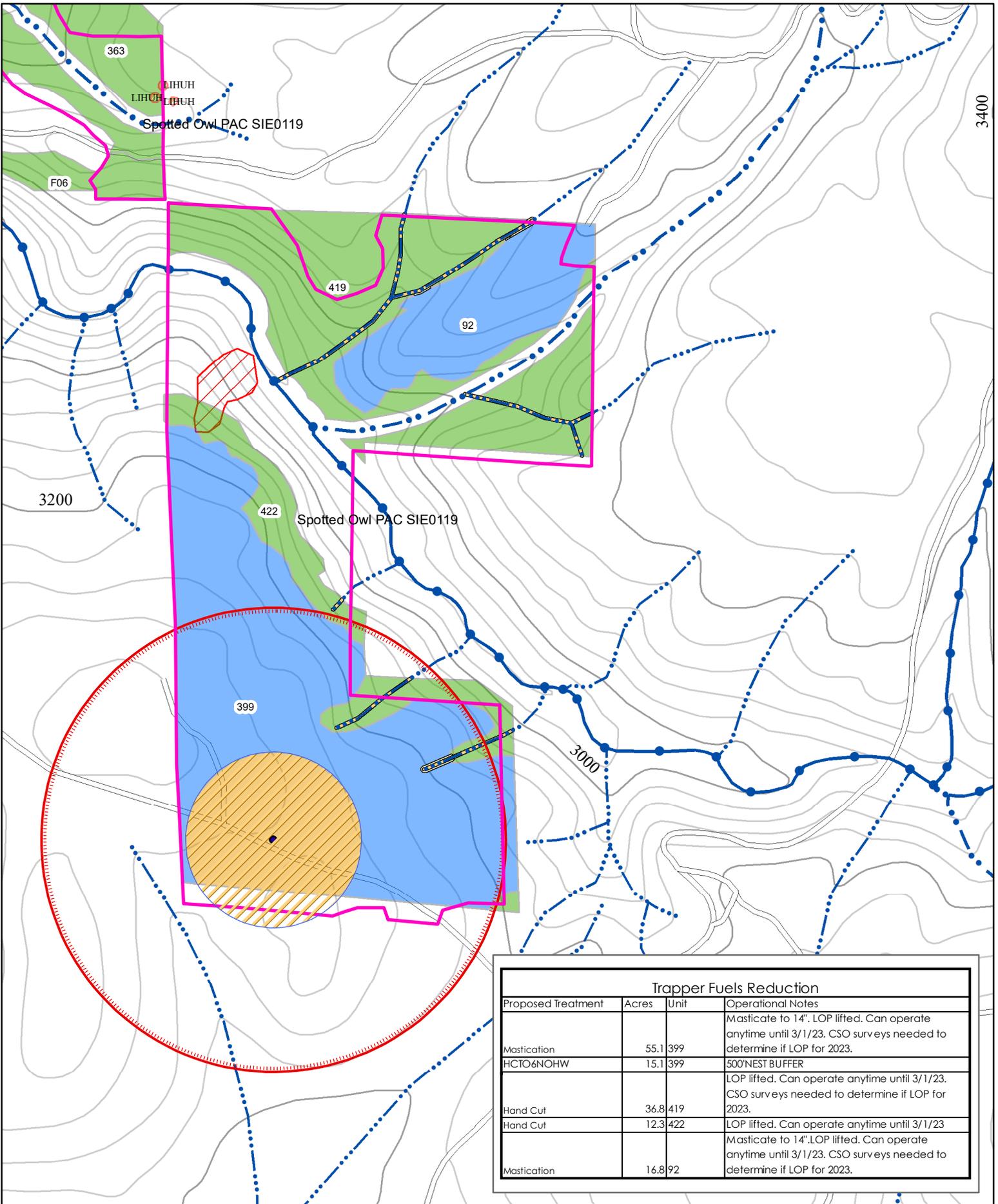


Trapper Fuels Map 5

- Trapper Fuel Treatment
 - Hand Cut
 - Mastication
 - Invasives
- Virtual Boundary
 - Virtual
- Watercourse
 - Intermittent
 - Ephemeral
- Ephemeral Buffer
 - Hand Cut Buffer
 - Mastication Buffer



1 inch = 540 feet

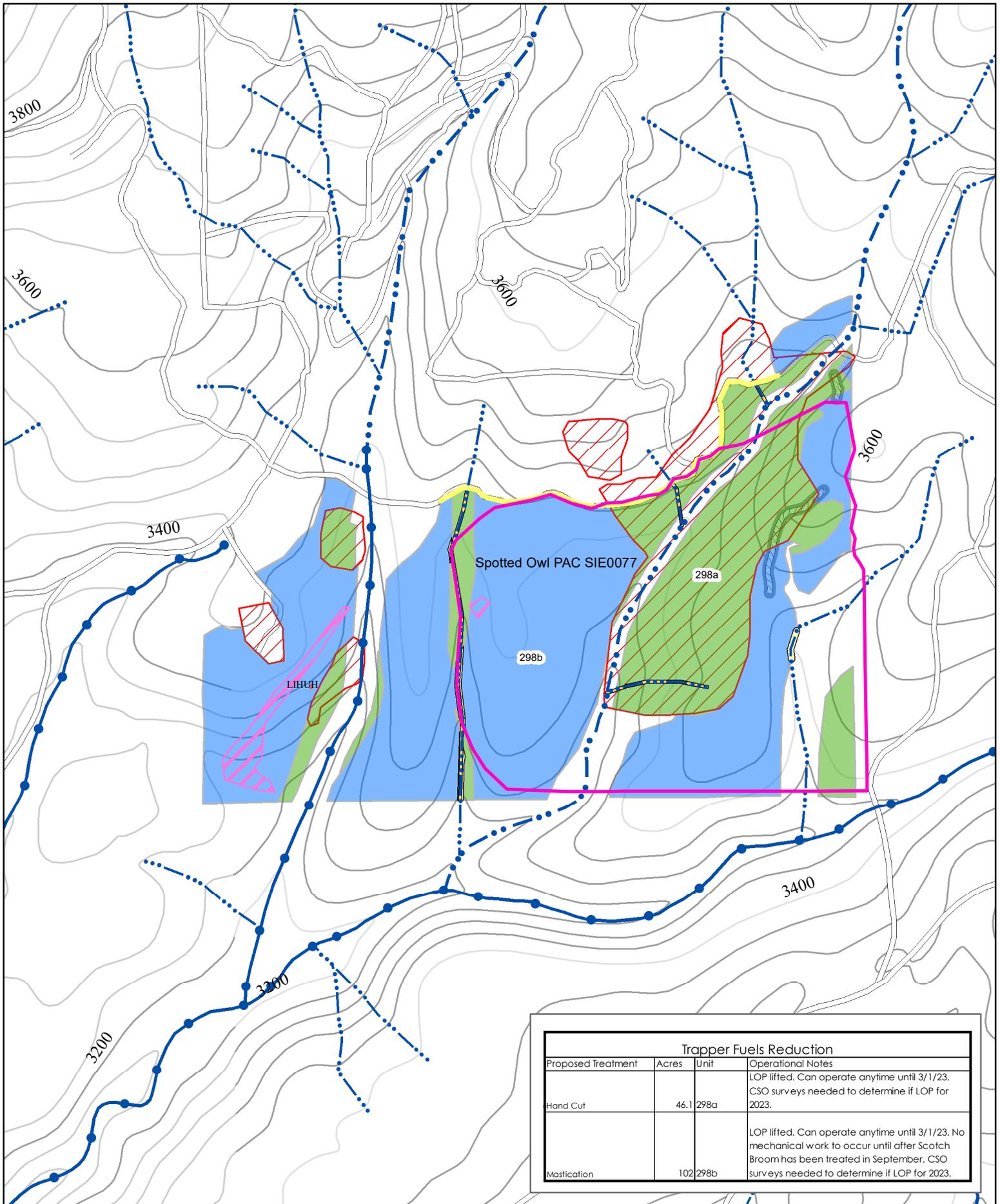


Trapper Fuels Map 6

<p>Trapper Fuel Treatment</p> <ul style="list-style-type: none"> Hand Cut Hand Cut to 6 in. No Hardwood Removed Mastication Special Status Plants 	<p>Watercourse</p> <ul style="list-style-type: none"> Intermittent Perennial Ephemeral 	<p>Ephemeral Buffer</p> <ul style="list-style-type: none"> Hand Cut Buffer Mastication Buffer Arc CSO_Buffer 	<p>CSO PAC YRRD</p> <ul style="list-style-type: none"> CSO PAC YRRD LOP Area
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1 inch = 700 feet

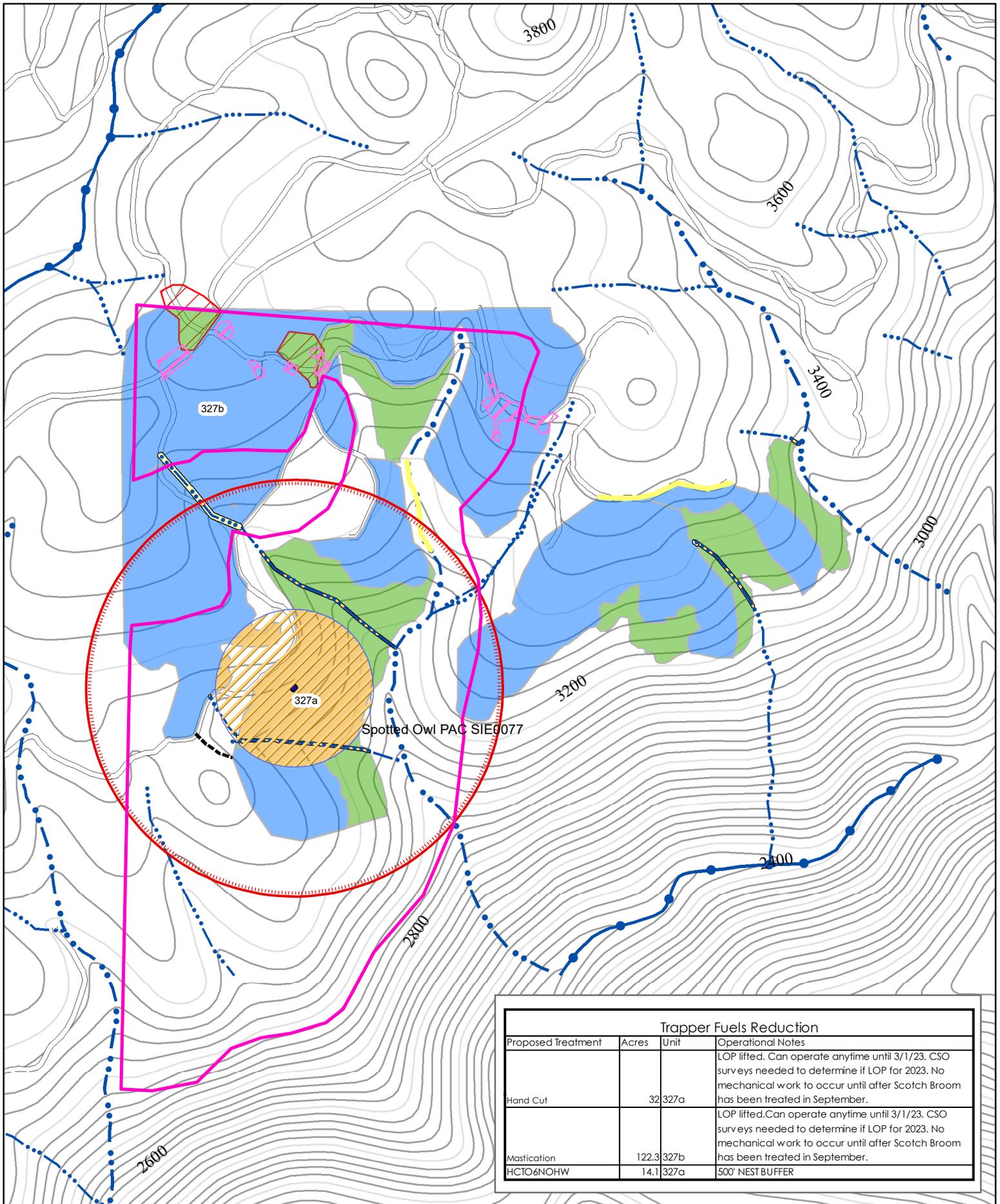


Trapper Fuels Map 7

- Trapper Fuel Treatment Virtual Boundary
- Hand Cut
- Mastication
- Invasives
- Special Status Plants
- Virtual
- Watercourse
- Intermittent
- Perennial
- Ephemeral
- Ephemeral Buffer
- Hand Cut Buffer
- Mastication Buffer
- Arc
- Designated Trails
- ARC ACCESS
- CSO PAC YRRD



1 inch = 760 feet



Trapper Fuels Map 8

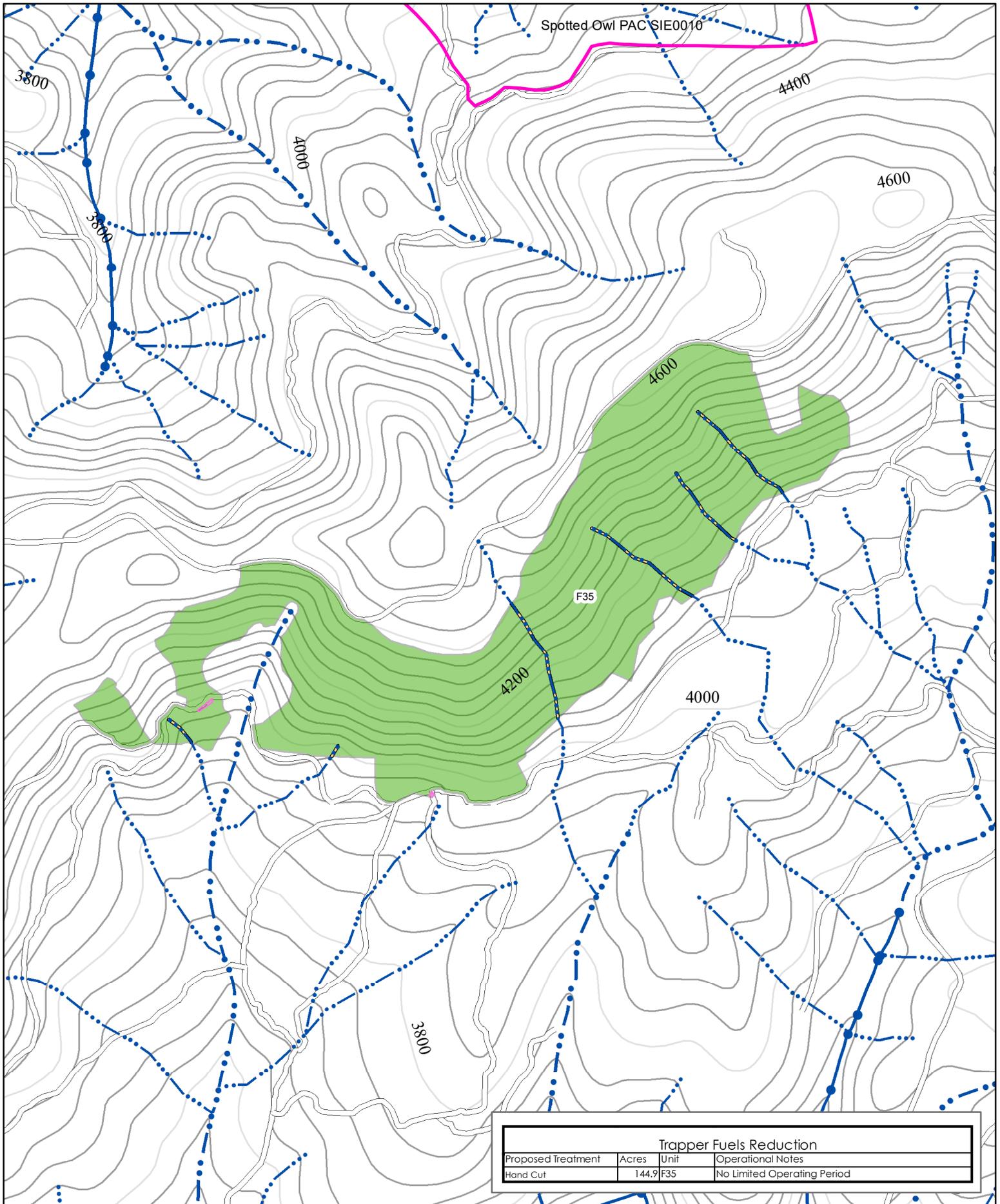
- Trapper Fuel Treatment**
- Hand Cut
 - Hand Cut to 6 in. No Hardwood Removed
 - Mastication
 - Invasives

- Virtual Boundary**
- Virtual
 - Ephemeral
 - Ephemeral Buffer
 - Intermittent
 - Perennial
- Watercourse**
- Hand Cut Buffer
 - Mastication Buffer
 - Arc

- Designated Trails**
- QUAD
 - CSO_Buffer
 - CSO PAC YRRD
 - LOP Area



1 inch = 780 feet

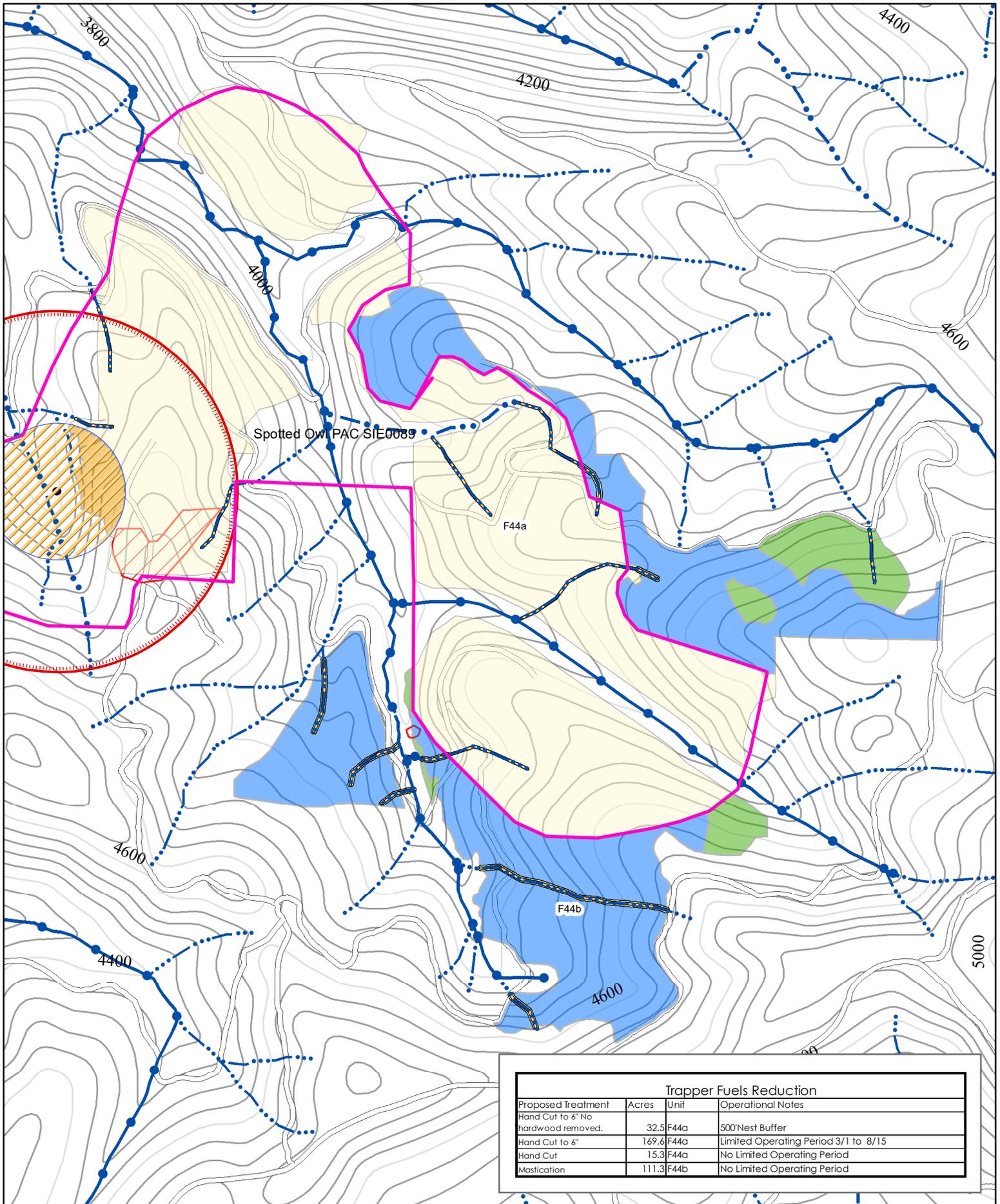


Trapper Fuels Map 9

- Trapper Fuel Treatment
 - Hand Cut
 - Invasives
 - Watercourse
 - Perennial
 - Ephemeral
 - Intermittent
 - Hand Cut Buffer
 - CSO PAC YRRD



1 inch = 920 feet



Trapper Fuels Reduction		
Proposed Treatment	Acres	Operational Notes
Hand Cut to 6" No hardwood removed.	32.5 F44a	500' Nest Buffer
Hand Cut to 6"	169.6 F44a	Limited Operating Period 3/1 to 8/15
Hand Cut	15.3 F44a	No Limited Operating Period
Mastication	111.3 F44b	No Limited Operating Period

Trapper Fuels Map 10

- Trapper Fuel Treatment**

 - Hand Cut
 - Hand Cut to 6 in.
 - Hand Cut to 6 in. No Hardwood Removed
 - Mastication
- Watercourse**

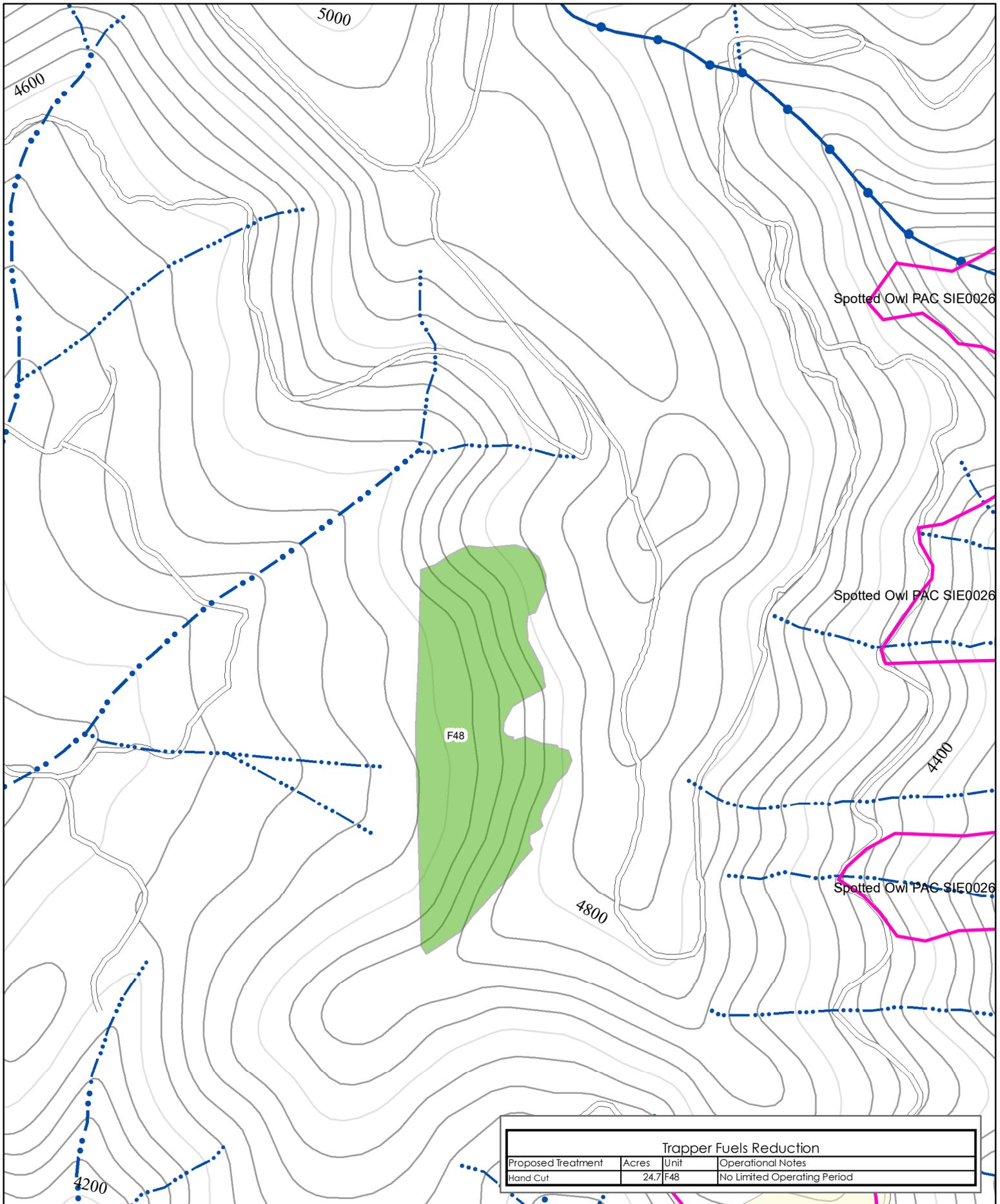
 - Intermittent
 - Perennial
 - Ephemeral
- Ephemeral Buffer**

 - Hand Cut Buffer
 - Mastication Buffer
 - Arc
 - CSO_Buffer
- CSO PAC YRRD**

 - CSO PAC YRRD
 - LOP Area



1 inch = 900 feet

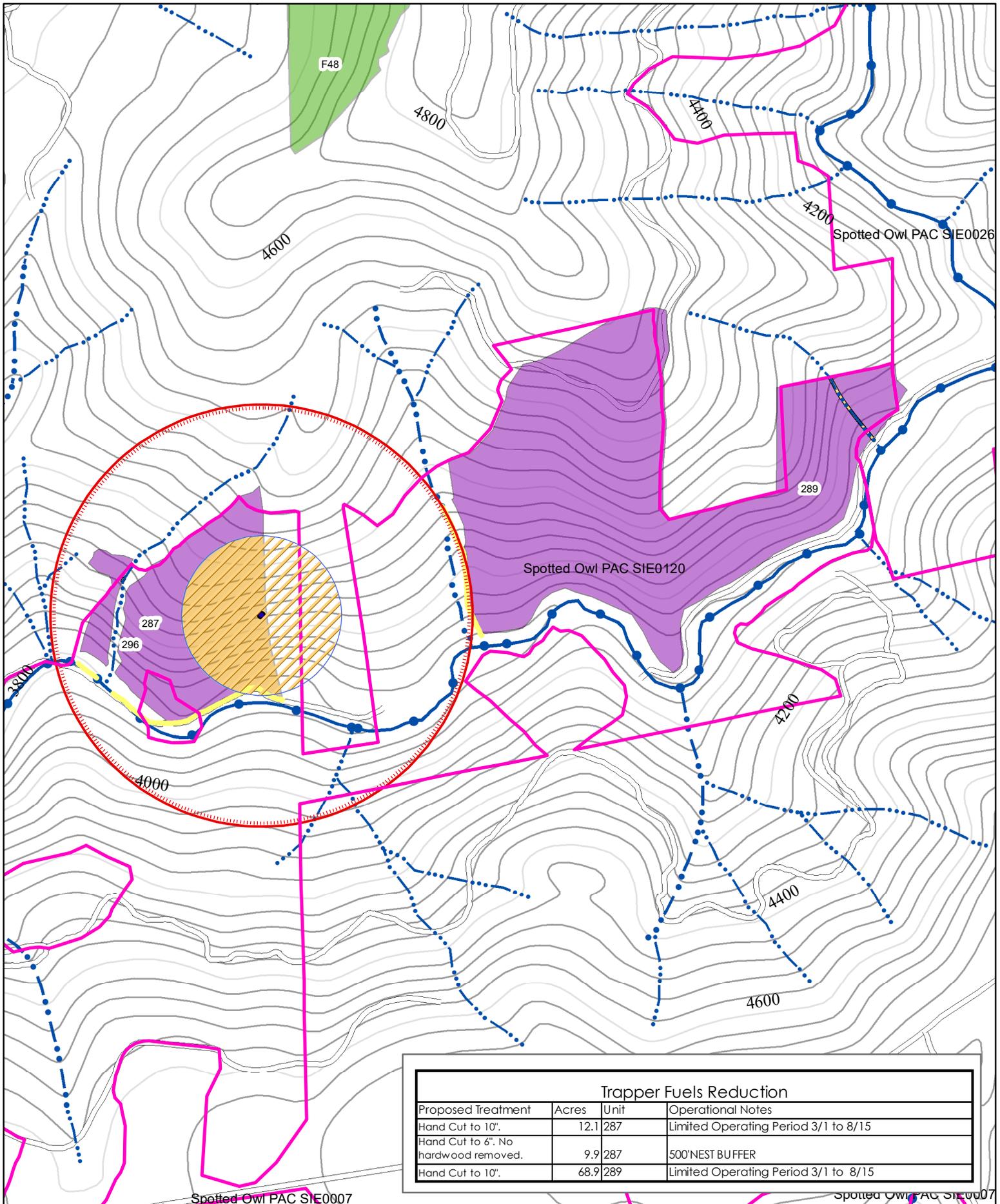


Trapper Fuels Map 11

- Trapper Fuel Treatment
 - Hand Cut
 - Hand Cut to 6 in.
 - Perennial
 - Ephemeral
 - CSO PAC YRRD
- Watercourse
 - - - Intermittent



1 inch = 620 feet

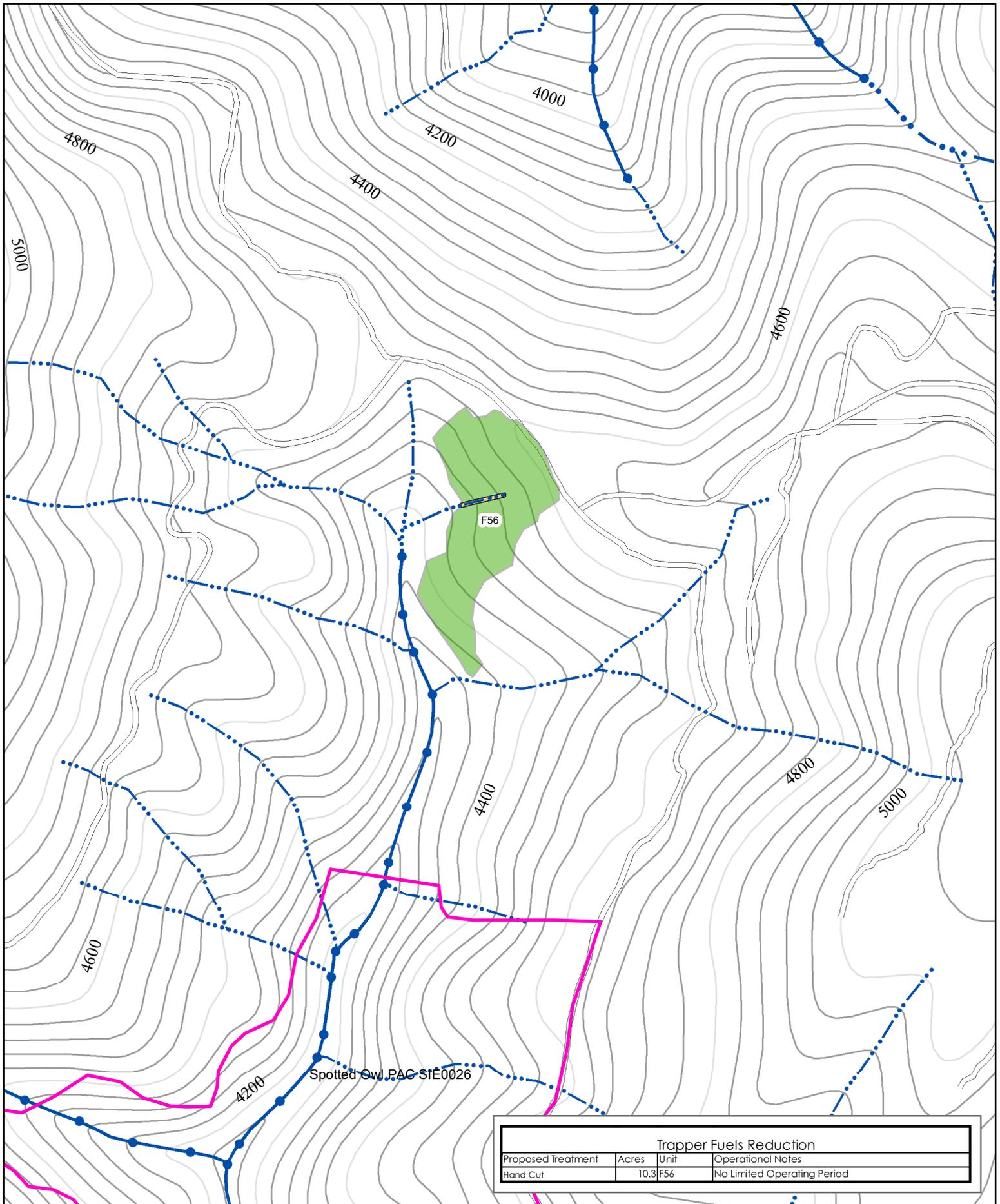


Trapper Fuels Reduction			
Proposed Treatment	Acres	Unit	Operational Notes
Hand Cut to 10".	12.1	287	Limited Operating Period 3/1 to 8/15
Hand Cut to 6". No hardwood removed.	9.9	287	500' NEST BUFFER
Hand Cut to 10".	68.9	289	Limited Operating Period 3/1 to 8/15

Trapper Fuels Map 12

Trapper Fuel Treatment	Virtual Boundary	Watercourse	LOP Area
Hand Cut	Virtual	Intermittent	LOP Area
HCTO10	Ephemeral Buffer	Perennial	
Hand Cut to 6 in. No Hardwood Removed	Hand Cut Buffer		
	CSO Buffer		
	CSO PAC YRRD		

1 inch = 770 feet



Trapper Fuels Map 13

- Trapper Fuel Treatment
 - Hand Cut
 - Watercourse
 - Intermittent
 - Perennial
- Ephemeral Buffer
 - Hand Cut Buffer
 - CSO PAC YRRD



1 inch = 610 feet

**APPENDIX E:
SCHEDULE OF ITEMS
AND
SPECIFICATIONS**

Trapper Forest Health Treatments – 1a/1b/1c

Contents

Item 1a: Hand Thin/Hand Pile	1
Unit 298a.....	1
Unit 327a.....	3
Unit 419	6
Unit F05a	8
Unit F44a	10
Item 1b: Mastication	13
Unit 298b	13
Unit 327b	15
Unit 399	16
Unit 92	17
Unit F05b	19
Unit F44b	20
Item 1c: Fire Line Construction Around Units	21
Guidelines for Operation.....	22

Item 1a: Hand Thin/Hand Pile

Unit 298a

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a

- healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. Selection of Cut Trees:**
1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)
- C. Treatment of Brush**
1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.
- D. Pruning**
1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
 2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
 3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.
- E. Hand Pile**
1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
 2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
 3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15’ of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
 4. Do not locate piles within 15 feet of existing downed logs greater than 20” in diameter without COR/inspector approval.
 5. Piles shall be constructed by hand to facilitate full consumption when they are burned.

6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be place on decaying stumps or stobs.

F. CSO PAC SIE0077

1. SIE0077 is located either partially or entirely within the WUI defense or threat zone and will receive mechanical fuels reduction treatments of surface and ladder fuels up to 10 inches DBH consisting of a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and/or pile burning.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)
3. Perennial (flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (100' on each side of channel edge)

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. Selection of Cut Trees:**
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- D. Pruning**
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 2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
 3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.
- E. Hand Pile**
1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.

2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be place on decaying stumps or stobs.

F. CSO PAC SIE0077

1. SIE0077 is located either partially or entirely within the WUI defense or threat zone and will receive mechanical fuels reduction treatments of surface and ladder fuels up to 10 inches DBH consisting of a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and/or pile burning.
2. Treatments within a 500 foot radius buffer around the activity centers within the PAC will be limited to only hand thinning of surface and ladder fuels up to 6 inches DBH. NO HARDWOOD REMOVAL.
3. LOP (Limited Operational Period): lifted for 2022 and 2023 until 3/1/2023. Surveys to be performed prior to 3/1/2023 to confirm that California spotted owls are not nesting for 2023 and 2024.

G. Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment
3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

H. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)

Unit 419

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. **Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. **Selection of Cut Trees:**
 1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to

be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15’ of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20” in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.

- 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
- 25 feet of any power lines or phone lines
- 15 feet of standing snags
- 15 feet of Pacific yew > 4" dbh
- No piles should be placed on decaying stumps or stobs.

F. CSO PAC SIE0119

1. SIE0019 is located in the WUI defense zone, and will have approximately 97 acres of mechanical thinning of surface and ladder fuels up to 14 inches DBH followed by a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and pile burning. Thinning of small trees and general fuels reduction in 97 acres of this PAC is modeled to remove approximately 95 percent of trees less than 6 inches DBH, 50 percent of trees 6 to 10 inches DBH, and 25 percent of trees 10 to 14 inches DBH.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)
3. Perennial (flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (100' on each side of channel edge)

Unit F05a

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. **Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.

5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.

B. Selection of Cut Trees:

1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.

9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be placed on decaying stumps or stobs.

F. Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment
3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

G. Hydrology

1. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)

Unit F44a

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.

3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.

B. Selection of Cut Trees:

1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.

7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - a. 10 feet from edge of stream channels
 - b. 25 feet of private property boundaries.
 - c. 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - d. 25 feet of any power lines or phone lines
 - e. 15 feet of standing snags
 - f. 15 feet of Pacific yew > 4" dbh
 - g. No piles should be place on decaying stumps or stobs.

F. CSO PAC SIE0089

1. SIE0089 is located outside of WUI and would receive hand fuels reduction treatments of surface and ladder fuels up to 6 inches DBH consisting of a combination of hand cutting, hand piling, lop and scatter, pruning, and/or pile burning.
2. Treatments within a 500 foot radius buffer around the activity centers within the PAC will be limited to only hand thinning of surface and ladder fuels up to 6 inches DBH. NO HARDWOOD REMOVAL.
3. LOP from March 1st to August 15th shall be maintained annually prohibiting underburning and mechanical activities that generate noise above ambient levels, such as thinning, piling, tree falling and road maintenance, within approximately 0.25 mile of an activity center, unless surveys confirm that California spotted owls are not nesting.
 - a. Landings would not be placed within California spotted owl PACs outside WUI defense zones.
 - b. A biologist would be consulted prior to mechanical treatments within PACs and be available onsite at the onset of operations.
 - c. Landings would only be placed in PACs within WUI defense zones with natural resource specialist approval.
 - d. Woodrat nests would be identified prior to implementation and would be protected by leaving pockets of vegetation around the nest.
 - e. A 500-foot hand cut only treatment zone would be placed around all California spotted owl activity centers (nest stand or equivalent). No conifers greater than 6 inches DBH would be removed, and no hardwood removal would be allowed.

- f. Prior to underburning in PACs, hand line may be constructed or hand thinning of vegetation and small (i.e., less than 6 inches DBH) trees would occur within approximately 500 feet of nest trees or activity centers, as needed.
- g. Hazardous trees or snags greater than 24 inches DBH would be felled and left in order to recruit large down woody debris up to levels identified as the desired condition for the area. Fallen trees/snags would not be bucked up into small pieces but would be retained as whole logs or large pieces, where feasible.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)
3. Perennial (flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (100' on each side of channel edge)

Item 1b: Mastication

Unit 298b

Masticate conifers less than 10 inches dbh and brush greater than 6.0 inches in height except for specified leave trees or within designated PACs (see CSO PACs). The Contractor shall select the healthiest and largest least-represented dominant and co-dominant conifer leave trees in order to retain an average spacing of 20 feet (when in plantations) or 25 feet (when in natural stands). Spacing can vary up to 50% in order to maintain and promote mixed-conifer species composition. If present, healthy sugar pine, will generally be favored, followed by ponderosa pine, Douglas-fir, and incense cedar over white fir.

1. If an overstory of large healthy conifers and hardwoods exists (trees greater than or equal to 10.0 inches dbh), the Contractor shall masticate all material less than 10 inches dbh. Within 20 feet of the drip line and up to 35 feet from the south-southwest portion of the drip line of live hardwoods with a dbh greater than or equal to 10.0 inches, masticate all conifers less than 10.0 inches dbh. Healthy conifers are those which are free from disease and defect, have the straightest bole, and the fullest crown.
2. Tree stump and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
3. Masticated material shall not lean against or be suspended in any leave tree.
4. All masticated material shall be kept within unit boundaries to the extent practicable. Any material at least 3 feet long and 1.0 inch diameter or greater on the large end which falls outside of unit boundaries or into streams, ditches, culverts, roads, roads banks, or trails shall be removed by the end of the day.
5. Residual debris shall lie relatively flat on the ground and generally not exceed 12 inches in depth and individual masticated pieces shall not exceed 3 feet in length.

6. After treatment, tree stump heights and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
7. Specified vegetation shall be masticated to within 2 feet of leave trees without causing damage to residual stand.

Mastication will be accomplished with a machine which shall meet the following requirements:

1. Ground pressure shall not exceed a maximum of 7.5 psi.
2. Machine width maximum shall not exceed 12 feet.
3. Machine shall be equipped with a masticating or mulching head.
Operations would generally be limited to slopes less than 30%, with short pitches less than 150 feet long and up to 35%.

Trees, Shrubs, and other Plants to be Left Untreated

1. All noxious weeds shall be left untreated with no equipment or personnel entering the buffer as flagged on the ground with orange and black “noxious weed” flagging
2. Do not cut any riparian vegetation such as but not limited to: willow, dogwood, rushes, sedges, etc.
3. Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.

CSO PAC SIE0077

SIE0077 is located either partially or entirely within the WUI defense or threat zone and will receive mechanical fuels reduction treatments of surface and ladder fuels up to 10 inches DBH consisting of a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and/or pile burning.

Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment
3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

Hydrology

1. Ephemeral (not flagged)
 - a. Mechanical operations can occur within 20’ of stream channel and reach in the rest of the way
 - i. Designated crossing will be indicated
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50’ on each side of channel edge)
3. Perennial (flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (100’ on each side of channel edge)

Unit 327b

Masticate conifers less than 10 inches dbh and brush greater than 6.0 inches in height except for specified leave trees or within designated PACs (see CSO PACs). The Contractor shall select the healthiest and largest least-represented dominant and co-dominant conifer leave trees in order to retain an average spacing of 20 feet (when in plantations) or 25 feet (when in natural stands). Spacing can vary up to 50% in order to maintain and promote mixed-conifer species composition. If present, healthy sugar pine, will generally be favored, followed by ponderosa pine, Douglas-fir, and incense cedar over white fir.

1. If an overstory of large healthy conifers and hardwoods exists (trees greater than or equal to 10.0 inches dbh), the Contractor shall masticate all material less than 10 inches dbh. Within 20 feet of the drip line and up to 35 feet from the south-southwest portion of the drip line of live hardwoods with a dbh greater than or equal to 10.0 inches, masticate all conifers less than 10.0 inches dbh. Healthy conifers are those which are free from disease and defect, have the straightest bole, and the fullest crown.
2. Tree stump and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
3. Masticated material shall not lean against or be suspended in any leave tree.
4. All masticated material shall be kept within unit boundaries to the extent practicable. Any material at least 3 feet long and 1.0 inch diameter or greater on the large end which falls outside of unit boundaries or into streams, ditches, culverts, roads, roads banks, or trails shall be removed by the end of the day.
5. Residual debris shall lie relatively flat on the ground and generally not exceed 12 inches in depth and individual masticated pieces shall not exceed 3 feet in length.
6. After treatment, tree stump heights and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
7. Specified vegetation shall be masticated to within 2 feet of leave trees without causing damage to residual stand.

Mastication will be accomplished with a machine which shall meet the following requirements:

1. Ground pressure shall not exceed a maximum of 7.5 psi.
2. Machine width maximum shall not exceed 12 feet.
3. Machine shall be equipped with a masticating or mulching head.
Operations would generally be limited to slopes less than 30%, with short pitches less than 150 feet long and up to 35%.

Trees, Shrubs, and other Plants to be Left Untreated

1. All noxious weeds shall be left untreated with no equipment or personnel entering the buffer as flagged on the ground with orange and black "noxious weed" flagging
2. Do not cut any riparian vegetation such as but not limited to: willow, dogwood, rushes, sedges, etc.
3. Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.

CSO PAC SIE0077

SIE0077 is located either partially or entirely within the WUI defense or threat zone and will receive mechanical fuels reduction treatments of surface and ladder fuels up to 10 inches DBH consisting of a

combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and/or pile burning.

1. LOP (Limited Operational Period): lifted for 2022 and 2023 until 3/1/2023. Surveys to be performed prior to 3/1/2023 to confirm that California spotted owls are not nesting for 2023 and 2024.

Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment
3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

Hydrology

1. Ephemeral (not flagged)
 - a. Mechanical operations can occur within 20' of stream channel and reach in the rest of the way
 - i. Designated crossing will be indicated
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)

Unit 399

Masticate conifers less than 10 inches dbh and brush greater than 6.0 inches in height except for specified leave trees or within designated PACs (see CSO PACs). The Contractor shall select the healthiest and largest least-represented dominant and co-dominant conifer leave trees in order to retain an average spacing of 20 feet (when in plantations) or 25 feet (when in natural stands). Spacing can vary up to 50% in order to maintain and promote mixed-conifer species composition. If present, healthy sugar pine, will generally be favored, followed by ponderosa pine, Douglas-fir, and incense cedar over white fir.

1. If an overstory of large healthy conifers and hardwoods exists (trees greater than or equal to 10.0 inches dbh), the Contractor shall masticate all material less than 10 inches dbh. Within 20 feet of the drip line and up to 35 feet from the south-southwest portion of the drip line of live hardwoods with a dbh greater than or equal to 10.0 inches, masticate all conifers less than 10.0 inches dbh. Healthy conifers are those which are free from disease and defect, have the straightest bole, and the fullest crown.
2. Tree stump and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
3. Masticated material shall not lean against or be suspended in any leave tree.
4. All masticated material shall be kept within unit boundaries to the extent practicable. Any material at least 3 feet long and 1.0 inch diameter or greater on the large end which falls outside of unit boundaries or into streams, ditches, culverts, roads, roads banks, or trails shall be removed by the end of the day.

5. Residual debris shall lie relatively flat on the ground and generally not exceed 12 inches in depth and individual masticated pieces shall not exceed 3 feet in length.
6. After treatment, tree stump heights and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
7. Specified vegetation shall be masticated to within 2 feet of leave trees without causing damage to residual stand.

Mastication will be accomplished with a machine which shall meet the following requirements:

1. Ground pressure shall not exceed a maximum of 7.5 psi.
2. Machine width maximum shall not exceed 12 feet.
3. Machine shall be equipped with a masticating or mulching head.
Operations would generally be limited to slopes less than 30%, with short pitches less than 150 feet long and up to 35%.

Trees, Shrubs, and other Plants to be Left Untreated

1. All noxious weeds shall be left untreated with no equipment or personnel entering the buffer as flagged on the ground with orange and black “noxious weed” flagging
2. Do not cut any riparian vegetation such as but not limited to: willow, dogwood, rushes, sedges, etc.
3. Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.

CSO PAC SIE0119

2. SIE0019 is located in the WUI defense zone, and will have approximately 97 acres of mechanical thinning of surface and ladder fuels up to 14 inches DBH followed by a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and pile burning. Thinning of small trees and general fuels reduction in 97 acres of this PAC is modeled to remove approximately 95 percent of trees less than 6 inches DBH, 50 percent of trees 6 to 10 inches DBH, and 25 percent of trees 10 to 14 inches DBH.
3. Treatments within a 500 foot radius buffer around the activity centers within the PAC will be limited to only hand thinning of surface and ladder fuels up to 6 inches DBH. NO HARDWOOD REMOVAL.
4. LOP (Limited Operational Period): lifted for 2022 and 2023 until 3/1/2023. Surveys to be performed prior to 3/1/2023 to confirm that California spotted owls are not nesting for 2023 and 2024.

Hydrology

1. Ephemeral (not flagged)
 - a. Mechanical operations can occur within 20’ of stream channel and reach in the rest of the way

Unit 92

Masticate conifers less than 10 inches dbh and brush greater than 6.0 inches in height except for specified leave trees or within designated PACs (see CSO PACs). The Contractor shall select the healthiest and

largest least-represented dominant and co-dominant conifer leave trees in order to retain an average spacing of 20 feet (when in plantations) or 25 feet (when in natural stands). Spacing can vary up to 50% in order to maintain and promote mixed-conifer species composition. If present, healthy sugar pine, will generally be favored, followed by ponderosa pine, Douglas-fir, and incense cedar over white fir.

1. If an overstory of large healthy conifers and hardwoods exists (trees greater than or equal to 10.0 inches dbh), the Contractor shall masticate all material less than 10 inches dbh. Within 20 feet of the drip line and up to 35 feet from the south-southwest portion of the drip line of live hardwoods with a dbh greater than or equal to 10.0 inches, masticate all conifers less than 10.0 inches dbh. Healthy conifers are those which are free from disease and defect, have the straightest bole, and the fullest crown.
2. Tree stump and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
3. Masticated material shall not lean against or be suspended in any leave tree.
4. All masticated material shall be kept within unit boundaries to the extent practicable. Any material at least 3 feet long and 1.0 inch diameter or greater on the large end which falls outside of unit boundaries or into streams, ditches, culverts, roads, roads banks, or trails shall be removed by the end of the day.
5. Residual debris shall lie relatively flat on the ground and generally not exceed 12 inches in depth and individual masticated pieces shall not exceed 3 feet in length.
6. After treatment, tree stump heights and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
7. Specified vegetation shall be masticated to within 2 feet of leave trees without causing damage to residual stand.

Mastication will be accomplished with a machine which shall meet the following requirements:

1. Ground pressure shall not exceed a maximum of 7.5 psi.
2. Machine width maximum shall not exceed 12 feet.
3. Machine shall be equipped with a masticating or mulching head.
Operations would generally be limited to slopes less than 30%, with short pitches less than 150 feet long and up to 35%.

Trees, Shrubs, and other Plants to be Left Untreated

1. All noxious weeds shall be left untreated with no equipment or personnel entering the buffer as flagged on the ground with orange and black "noxious weed" flagging
2. Do not cut any riparian vegetation such as but not limited to: willow, dogwood, rushes, sedges, etc.
3. Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.

CSO PAC SIE0119

1. SIE0019 is located in the WUI defense zone, and will have approximately 97 acres of mechanical thinning of surface and ladder fuels up to 14 inches DBH followed by a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and pile burning. Thinning of small trees and general fuels reduction in 97 acres of this PAC is modeled to remove approximately 95 percent of trees less than 6 inches DBH, 50 percent of trees 6 to 10 inches DBH, and 25 percent of trees 10 to 14 inches DBH.

Hydrology

1. Ephemeral (not flagged)
 - a. Mechanical operations can occur within 20' of stream channel and reach in the rest of the way
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)

Unit F05b

Masticate conifers less than 10 inches dbh and brush greater than 6.0 inches in height except for specified leave trees or within designated PACs (see CSO PACs). The Contractor shall select the healthiest and largest least-represented dominant and co-dominant conifer leave trees in order to retain an average spacing of 20 feet (when in plantations) or 25 feet (when in natural stands). Spacing can vary up to 50% in order to maintain and promote mixed-conifer species composition. If present, healthy sugar pine, will generally be favored, followed by ponderosa pine, Douglas-fir, and incense cedar over white fir.

1. If an overstory of large healthy conifers and hardwoods exists (trees greater than or equal to 10.0 inches dbh), the Contractor shall masticate all material less than 10 inches dbh. Within 20 feet of the drip line and up to 35 feet from the south-southwest portion of the drip line of live hardwoods with a dbh greater than or equal to 10.0 inches, masticate all conifers less than 10.0 inches dbh. Healthy conifers are those which are free from disease and defect, have the straightest bole, and the fullest crown.
2. Tree stump and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
3. Masticated material shall not lean against or be suspended in any leave tree.
4. All masticated material shall be kept within unit boundaries to the extent practicable. Any material at least 3 feet long and 1.0 inch diameter or greater on the large end which falls outside of unit boundaries or into streams, ditches, culverts, roads, roads banks, or trails shall be removed by the end of the day.
5. Residual debris shall lie relatively flat on the ground and generally not exceed 12 inches in depth and individual masticated pieces shall not exceed 3 feet in length.
6. After treatment, tree stump heights and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
7. Specified vegetation shall be masticated to within 2 feet of leave trees without causing damage to residual stand.

Mastication will be accomplished with a machine which shall meet the following requirements:

1. Ground pressure shall not exceed a maximum of 7.5 psi.
2. Machine width maximum shall not exceed 12 feet.
3. Machine shall be equipped with a masticating or mulching head.
Operations would generally be limited to slopes less than 30%, with short pitches less than 150 feet long and up to 35%.

Trees, Shrubs, and other Plants to be Left Untreated

1. All noxious weeds shall be left untreated with no equipment or personnel entering the buffer as flagged on the ground with orange and black "noxious weed" flagging

2. Do not cut any riparian vegetation such as but not limited to: willow, dogwood, rushes, sedges, etc.
3. Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.

Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment
3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

Hydrology

1. Ephemeral (not flagged)
 - a. Mechanical operations can occur within 20' of stream channel and reach in the rest of the way
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)

Unit F44b

Masticate conifers less than 10 inches dbh and brush greater than 6.0 inches in height except for specified leave trees or within designated PACs (see CSO PACs). The Contractor shall select the healthiest and largest least-represented dominant and co-dominant conifer leave trees in order to retain an average spacing of 20 feet (when in plantations) or 25 feet (when in natural stands). Spacing can vary up to 50% in order to maintain and promote mixed-conifer species composition. If present, healthy sugar pine, will generally be favored, followed by ponderosa pine, Douglas-fir, and incense cedar over white fir.

1. If an overstory of large healthy conifers and hardwoods exists (trees greater than or equal to 10.0 inches dbh), the Contractor shall masticate all material less than 10 inches dbh. Within 20 feet of the drip line and up to 35 feet from the south-southwest portion of the drip line of live hardwoods with a dbh greater than or equal to 10.0 inches, masticate all conifers less than 10.0 inches dbh. Healthy conifers are those which are free from disease and defect, have the straightest bole, and the fullest crown.
2. Tree stump and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
3. Masticated material shall not lean against or be suspended in any leave tree.
4. All masticated material shall be kept within unit boundaries to the extent practicable. Any material at least 3 feet long and 1.0 inch diameter or greater on the large end which falls outside of unit boundaries or into streams, ditches, culverts, roads, roads banks, or trails shall be removed by the end of the day.
5. Residual debris shall lie relatively flat on the ground and generally not exceed 12 inches in depth and individual masticated pieces shall not exceed 3 feet in length.

6. After treatment, tree stump heights and brush stob heights shall not exceed 6.0 inches in height, as measured on the uphill side or 6 inches above natural obstacles (i.e. logs, rocks).
7. Specified vegetation shall be masticated to within 2 feet of leave trees without causing damage to residual stand.

Mastication will be accomplished with a machine which shall meet the following requirements:

1. Ground pressure shall not exceed a maximum of 7.5 psi.
2. Machine width maximum shall not exceed 12 feet.
3. Machine shall be equipped with a masticating or mulching head.
Operations would generally be limited to slopes less than 30%, with short pitches less than 150 feet long and up to 35%.

Trees, Shrubs, and other Plants to be Left Untreated

1. All noxious weeds shall be left untreated with no equipment or personnel entering the buffer as flagged on the ground with orange and black “noxious weed” flagging
2. Do not cut any riparian vegetation such as but not limited to: willow, dogwood, rushes, sedges, etc.
3. Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.

Hydrology

1. Ephemeral (not flagged)
 - a. Mechanical operations can occur within 20’ of stream channel and reach in the rest of the way
 - i. Designated crossing will be indicated
2. Perennial (flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (100’ on each side of channel edge)

Item 1c: Fire Line Construction Around Units

Following piling, fire line shall be constructed around all sides of each unit. The contractor will construct prescribed fire control line to include a saw line cut to a minimum width of 15 feet, and a hand line, dug to a depth of bare mineral soil and to a width of two feet. The hand line will be constructed within the saw line so that five feet of saw line extends on the side opposite the hand piles (green side) from the hand line, and 10 feet of saw line extends out from the hand line to the side with the hand piles (black side).

1. Saw line: The contractor is to create a saw line by cutting, clearing, and removing surface, ladder, and standing fuels in order to create a continuous, saw cut fuel break, to the width of 15 feet. From within this saw line, the contractor will cut and remove the following material;
 - a) All dead and down material larger than 2 inches in diameter.
 - b) All standing dead less than 16 inches in diameter.
 - c) All green trees smaller than 8 inches in diameter.
 - d) All shrubs and bushes, both live and dead.
 - e) Prune all green trees larger than 8 inches in diameter to a height of six feet off the ground.
2. Hand line: Within the saw line, the contractor will create a fire break using hand tools to dig down to a depth to reach bare mineral soil, and to a width of two feet. All flammable material should be removed during the construction, leaving only non-flammable, bare mineral soil.
3. The contractor will construct a 1 foot wide handline down to bare mineral soil around any snags or large stumps located near the line that cannot be removed.

4. Handline designation will be available to the contractor via Avenza maps. If contractor does not have Avenza maps handline will be flagged in fluorescent pink.

Guidelines for Operation

Contractor Responsibility: The Contractor shall provide everything--including, but not limited to, all equipment, supplies, transportation, labor, and supervision--necessary to complete the project, except for that which the contract clearly states is to be furnished by NFF.

Accessibility: Most sub-items are accessible with a 2-wheel drive vehicle after snowmelt. NFF assumes no liability to perform special road maintenance to keep roads open to the project area.

Contractor-Furnished Equipment: Equipment shall be furnished on a fully operational basis, of modern design, and in good operating condition, with a competent, fully qualified operator. The Contractor shall furnish all fuel, lubricants, and personnel necessary for the operation of the equipment. All repairs, service and replacements are the responsibility of the Contractor and shall be at the Contractor's expense. If, during the contract period, the equipment requires repairs before operations can continue, it shall be the responsibility of the Contractor to complete such repairs. The Contractor shall provide plastic that is at a minimum 6 millimeter thick.

Public Safety

The contractor shall provide for public safety when operating equipment within 200 feet of open roadways and designated trails by posting cautionary signs warning of hazardous work ahead. ***Warning signs (at least two, one for each direction) shall be posted on roads. These shall be located 200' from the intersection of the road and unit boundary at each edge of the unit. Signs shall be posted whenever working to alert oncoming traffic of the safety hazards associated with the operation. Any trails in the project area must also be signed. Signs shall include phrases similar to "Caution, tree falling stay back 200 feet" and be no less than 3 feet X 3 feet in size. Lettering shall be at least 6 inches in height.***

Project Boundary Description:

The perimeters of sub-items will be partially flagged with orange and black-striped flagging and other areas of the sub-items will be identified with a single piece of flagging. In some cases, roads may make up part of the boundary of the unit and therefore these parts of the unit boundary may or may not be marked or flagged. The project maps are intended to show the general shape and location of the work areas. The map is not intended to be accurate as to precise location and dimension. If the map and field boundaries conflict, the field boundaries shall govern. Positions of streams and topographic features, when shown, also may be approximate.

Protected Sites and Exclusions (non-work areas): *The following shall be excluded or protected:*

1. **No** hand piling will be permitted within 10 feet of the banks of **stream channels and waterbodies.**
2. **Cultural resource sites** within the project area will be flagged with blue and black stripe flagging and avoided.
3. **Sensitive plant avoidance areas** will be flagged in advance of treatment with orange and white-striped flagging. These areas will not be treated and are to be completely avoided

during all activities, including staging of equipment, materials and crew as well as tree felling activities.

4. **Noxious weed** infestations will be marked with orange flagging with the words “Noxious Weed” in black prior to commencement of work. These areas will not be treated and are to be completely avoided during all activities, including staging of equipment, materials and crew as well as tree felling activities.

Applicable Management Requirements

1. Avoid damaging and retain elderberry, dogwood, California hazelnut, and Pacific yew.
2. Establish a 100-foot “riparian buffer” zone along each side of perennial streams and special aquatic features, 50-foot “riparian buffer” along each side of intermittent streams and establish a 10-foot “riparian buffer” zone along each side of ephemeral streams. These zones provide for shade and coarse large woody debris (CWD) to the stream channel and adjacent land. (Note: The Reservoir edge is included in the 100-foot perennial buffer.)
3. Unless otherwise agreed to by the Hydrologist, Botanist, and the Aquatic Biologist, no ground-disturbing activities will occur within riparian buffers. To recruit downed logs and minimize disturbance within riparian areas and to riparian species, fall and leave hazard trees within the riparian buffer.
4. All equipment and vehicles used for project implementation must be free of invasive plant material before moving into the project area. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material or other such debris. Cleaning shall occur at a vehicle washing station or steam-cleaning facility before the equipment and vehicles enter the project area. Equipment used during emergency work or used exclusively on paved surfaces is exempt from the cleaning requirement. When working in known invasive plant infestations, equipment shall be cleaned before moving to other National Forest Service system lands.
5. Avoid disturbance and do not stage equipment in known invasive plant infestations. Invasive plant infestations will be avoided during equipment traffic and soil-disturbing project activities. Avoidance areas will be identified on project maps.
6. **Survey monuments and bearing trees** shall be protected and not damaged in any way.
7. **All specified roads and recreational trails shown on contract maps** shall be left in the original condition existing prior to the commencement of work on this contract. Any water bars in skid trails disturbed by the Contractor's operations shall be restored to the condition prior to damage at the Contractor's expense. Excessive slash and chips cannot be left in the roadways and recreational trails after end of each work day. **All cut vegetation shall be kept within unit boundaries. If slash is fell onto the roadways, it must be removed by the end of each workday.**
8. Servicing and refueling equipment areas shall be located at a minimum of 300 feet from streams and other wet areas. In case of a HAZMAT spill, the material shall be immediately contained and NFF shall be immediately notified.

9. Avoid piling within the drip line of large trees (conifers & hardwoods), snags, and large downed logs
10. Within the sub-item boundaries, NFF may exclude non-work areas such as: rocky areas, wildlife areas, and other special areas. The Contracting Officer's Representative will designate non-work areas. Such areas exceeding 1/2 acre in size per unit may be excluded from payment.

Flagging Identification:

- Boundary: Black & Orange Striped
- Cultural Sites: Blue & Black Striped
- LOP: Black & Orange Striped
- Botany (Sensitive Plants and Noxious Weeds): Orange & White Striped with Black "Special Treatment" Lettering

Required Training:

Environmental awareness training will be conducted to contract representatives, Contract Officers, project managers, and field personnel prior to the onset of project work. Training will include a briefing on the following: (a) How to recognize Sierra Nevada yellow-legged frogs, (b) The specific measures that are being implemented to conserve the species, (c) The penalties for non-compliance, (d) If a Sierra Nevada yellow-legged frog is encountered in the work area, work activities in that area shall cease until the species has moved from the area on its own volition, or a U. S. Fish and Wildlife Service-approved biologist moves the individual in accordance with Forest Service approved procedures. If any injured or killed Sierra Nevada yellow-legged frogs are found, work activities will immediately cease in the area, and the COR or approved biologist will be notified as soon as possible to take appropriate action, which includes notification within 24 hours to the U. S. Fish and Wildlife Service.

Restrictions on Work:

Work may be performed at any time during the period of the contract, except as outlined here. Restrictions are as follows:

1. In accordance with the fire plan, included in Appendix H.
2. When the Contracting Officer (or designated representative) determines that adverse weather has made access too dangerous or that continued vehicular travel would cause unacceptable road damage.
3. When the Contracting Officer (or designated representative) determines that continued operation may be injurious to leave trees.
4. If any Sierra Nevada yellow-legged frog is found at any time during implementation of this Project, cease operations in the vicinity of the frog, vacate the immediate area and leave the frog along. If possible, take a photograph of the frog as follows: top looking down, and side view. No activity will occur in that area until such time as the frog has vacated the area on its own volition. With the exception of a U. S. Fish and Wildlife Service approved biologist, do not handle Sierra Nevada yellow-legged frogs. Report the occurrence as soon as possible to the COR or Designated Representative.

5. In units with an LOP for California spotted owl, no work shall occur from March 1 – August 15.

Definitions:

Aggregation – A pocket of densely packed trees distinct from adjacent areas within a project unit. It is characteristic for trees within aggregations to have a higher percent of *phenotypic defects* due to competition for resources in close proximity to others.

Brush – all woody shrub species such as manzanita, whitethorn, deerbrush, dwarf tanoak, silktassel and ribes. For the purposes of this contract bear clover, snowberry, prostrate manzanita and squaw carpet are not considered brush.

Conifer - A cone-bearing tree with needles or leaf scales (e.g. pine, fir, cedar).

Co-dominant Tree - A tree with the crown forming the general level of the crown cover and receiving full light from above, but comparatively little from the sides.

C.O.R. - Contracting Officer's Representative.

Crop Tree (Leave Tree) - Any crop tree without excessive damage, which has a live crown ratio of greater than 30%. The top will not be dead, broken, or forked.

Damaged tree – Any crop tree with one or more of the following injuries:

1. Any true fir that has any bark cut or removed to the cambium regardless of the amount.
2. Any other tree species that has bark cut or removed to the cambium from more than 25% of the circumference of the bole.
3. Any tree that has a broken, forked, or dead top.
4. Any tree that has had 25% or more of the live limbs or branches broken or removed by any operation.
5. Defects, which include sweeps in the bole and crooked boles.

DBH - Diameter at breast height; the diameter of a tree measured at a point 4-1/2 feet above the ground on the uphill side of the tree.

Diseased Trees – Any tree greater than two feet tall with a diameter less than ten inches at DBH with one or more of the following diseases:

1. **Mistletoe:** Trees with one or more visible infections on any part of the live crown or stem.
2. **Gall Rust:** Trees with one or more visible cankers on the bole or multiple cankers on the limbs in the green crown.
3. **Chlorosis:** Trees with off color foliage, weak root system and otherwise exhibiting a general unhealthy appearance.

4. **Damage:** Tree that exhibits insect infestation, severe mechanical, animal, or other damages (i.e. trees leaning severely).

5. **White Pine Blister Rust:** On sugar pine, stem / branch cankers, yellow to red flagging of branches and tops.

Dying Tree – 50% or more of the foliage-bearing crown is recently dead and/or 75% or more of the circumference of the lower bole is girdled by wildlife.

Excess Tree - A tree that is left but should have been cut to meet standards.

Foliage – Tree/plant leaves.

Forked Trees – Trees with one or more forks in the live crown or with old dead or broken-out tops within 13 feet of the ground.

Girdled – A cut through the tree bark or branch all the way around.

Hang-up Tree – A cut tree suspended above the ground by a live tree.

Hardwood – A tree with broad leaves rather than needles (e.g., oak, madrone, big leaf maple, elderberry, dogwood, etc.)

Insect Infested Tree – A tree pitching sap from the bark in multiple spots on the bole, frass in cracks of bark or at base of tree, dead or fading top.

Limited Operating Period (LOP) – This indicates there is a limited period in which operations may NOT occur for a particular work unit. This period is variable based on the species being protected. See the Schedule of Treatments for the definition of each LOP.

Live Crown Ratio – The percentage of the live limbs in relation to the total tree height.

Invasive plants (Noxious Weeds) - For the purpose of this contract, the following list refers to species on the Tahoe National Forest Invasive Plant List, last updated 05/01/2017, namely:

Scientific Name	Common Name
<i>Acroptilon repens</i>	Russian knapweed
<i>Aegilops triuncialis</i>	barbed goatgrass
<i>Ailanthus altissima</i>	tree-of-heaven
<i>Arundo donax</i>	giant reed
<i>Bromus tectorum</i>	cheatgrass

<i>Berteroa incana</i>	hoary alyssum
<i>Carduus nutans</i>	musk thistle
<i>Carduus pyconocephalus</i>	Italian thistle
<i>Centaurea diffusa</i>	diffuse knapweed
<i>Centaurea melitensis</i>	Maltese starthistle
<i>Centaurea solstitialis</i>	yellow starthistle
<i>Centaurea stoebe</i>	spotted knapweed
<i>Chondrilla juncea</i>	skeletonweed
<i>Cirsium arvense</i>	Canada thistle
<i>Cortaderia selloana</i>	pampasgrass
<i>Cytisus scoparius</i>	scotchbroom
<i>Dittrichia graveolens</i>	stinkwort
<i>Elymus caput-medusae</i>	medusahead
<i>Euphorbia oblongata</i>	oblong spurge
<i>Foeniculum vulgare</i>	fennel
<i>Genista monspessulana</i>	French broom
<i>Hydrilla verticillata</i>	hydrilla
<i>Isatis tinctoria</i>	dyer's woad
<i>Lepidium chalepensis</i>	lenspod whitetop
<i>Lepidium draba</i>	whitetop
<i>Lepidium latifolium</i>	tall whitetop
<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	Dalmatian toadflax
<i>Lythrum salicaria</i>	purple loosestrife
<i>Myriophyllum spicatum</i>	Eurasian water milfoil
<i>Onopordum acanthium</i>	Scotch thistle
<i>Phalaris arundinacea</i>	reed canary grass
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Spartium junceum</i>	Spanish broom
<i>Ulex europaeus</i>	gorse

Phenotypic Defects - Referring to inherited defects or deficiencies caused by local environmental conditions. Examples: Trees with flat top shapes having under 4 inches of leader growth (measure of previous year), forked or multiple tops, twisting in the limbs bole and trees with sweeping, leaning or drooping forms.

Riparian Conservation Area (RCA) – Areas adjacent to streams, ponds, and springs protected by limiting treatments in some situations. RCA's are as follows:

- Perennial streams = 300 feet each side of channel
- Seasonal (Intermittent and Perennial) = 150 feet each side of channel
- Streams in Inner Gorge = Top of inner gorge
- Special Aquatic Features (meadows, lakes, and springs) = 300 feet from edge of feature or riparian vegetation, whichever is greatest.

Scour Zone – The zone where moving water runs-off and removing any surface cover down to bare mineral soil.

Slash - All debris resulting from operations including stems, limbs and tops of trees, and brush.

Suppressed Tree - Any tree with less than 30% of its total height in live green crown or with less than 4 inches of current leader growth.

Thinning - The cutting of trees to meet the short term desired condition.

True fir – This classification refers to the conifer species red fir & white fir.

Inspection

Inspection of Services--Fixed-Price

1. Sampling

Plots. At least one percent of each treatment area will be sampled by a random series of plots distributed over the entire area. Plot size will be:

1/250 acre

1/100 acre

1/50 acre

1/10 acre

other (specify)

Transects.

[]*Other* (specify)

1/50 acre plot is a circular plot measured on a horizontal plane having a radius of 16.7 feet.

2. Specific Inspection Procedures

Each plot will be inspected to determine:

- A. The number of trees left uncut per specification in APPENDIX E. If any trees are left uncut per specifications or with too high of stump, the plot fails.
- B. The number of brush left uncut per specification in APPENDIX E. If more than 1 shrub is left uncut or left with too high stump the plot will fail.
- C. Pruning will be inspected for adherence to specification in APPENDIX E. If more than 2 branches per this spec is left the plot will fail.
- D. Tracked chipping will be inspected per specifications in APPENDIX E. If chipped material exceeds 6 inches in depth throughout the entire plot and/or chipped material is distributed within the riparian area, the plot will fail.
- E. Mastication will be inspected per specification in APPENDIX E.
- F. The nearest hand pile to the plot center will also be inspected (even if it is out of the plot). The hand pile must meet all specifications as stated in APPENDIX E or the hand pile inspection fails.
- G. Any vegetation cut per specification 8-2.2 and 8-2.5 **Trees, shrubs, and other Plants to be Left Untreated** will be charged under liquidated damages.

Work will be accepted for payment on the basis of final inspection and passage of specification. NFF or the Forest Service will inspect for compliance of specifications. Plots will be located throughout the sub-items so as to obtain a representative sample of the area. Sub-items will be inspected separately and not combined for the purpose of determining percent of satisfactory work.

A series of 1/50-acre plots (16.7 foot plot radius) distributed over the entire unit sufficient to yield at least a one-half on one percent sample (0.5%) will be taken. Plot centers will be marked.

On each plot the NFF or the Forest Service will record the plot number, whether the plot is satisfactory or unsatisfactory and the reason if unsatisfactory. Each plot will be examined to record findings on the items "1" through "10" listed below. To be considered satisfactory these items must meet the following criteria:

Performance Measures for Hand Cutting, Tracked Chipping, and Mastication

Each of these gets a rating of 1 with a total of 10 possible points.

1. Selection of leave trees (species priority and dbh)
2. Spacing of residual trees
3. Stumps of trees and brush so that there are no more than 3” to 6” remaining.
4. Prune branches of all remaining conifers to 6-10 feet in height
5. Mastication and tracked chipping is completed to specifications
6. No damage to residual trees
7. Any treated material that falls outside of unit boundary needs to be removed and hand piled.

Performance Measures for Hand Piling (Sub Items)

8. Placement/location of pile
9. Dimension and structure of pile (includes clearing around piles and material in piles is less than 4’ in length)
10. Plastic utilization/placement

3. Acceptance

Work on this contract will be deemed acceptable when a score of 9 points or more is achieved. The unit may be reworked ONCE and then re-inspected. This re-inspection score will be the final result for payment on that unit, (see re-inspection after rework below). Some of the units in this contract are so large, plots will be installed as work progresses and the Contractor will be notified of inspection results that are not satisfactory as they are found.

4. NFF Inspections

NFF inspections are for the purpose of satisfying the Forest Service that the services are acceptable and do not relieve the Contractor of the responsibility for maintaining quality control.

NFF or the Forest Service will conduct all inspections. The Contractor (or designated representative) is encouraged to be present to observe inspections. Summary results will be made available on request.

Compliance Inspections.

Visual compliance inspections will be made on a periodic basis. Such inspections are not final and do not constitute acceptance by the NFF.

Final Inspections.

Final (formal) inspections for payment will be made on completed sub-items only. Contractor shall request final inspections in writing and give NFF at least two working days advanced notice. Inspections will be completed within four working days after the notice is received. If the work is not ready for inspection at the time specified by the Contractor, the cost associated with the inspection attempt may be charged to the Contractor.

Disputed Inspection.

The Contractor may request re-inspection without rework if the results are unacceptable. Re-inspection must be requested in writing within 48 hours after receiving written notice of the

inspection results. Re-inspection will be accomplished within five working days after receipt of the contractor's written request.

The same sampling and inspection procedures will be used, but new samples will be taken. The inspection pattern will be shifted so that new samples will not overlap previously inspected samples. Results will be rounded to the nearest whole percent.

If re-inspection results are within five percentage points of the first inspection, the original inspection result will be used in determining acceptability and payment. If re-inspection results are greater than five percentage points above or below the first inspection, the re-inspection results will be used.

If the re-inspection results are within five percentage points of the first inspection, the Contractor shall pay the actual costs of the re-inspection.

Re-inspection after Rework.

Where rework after a failed inspection may improve the inspection results, the Contractor may rework the area and request (in writing) a second inspection. Re-inspection will be accomplished within five working days after the notice is received. The results of the second inspection will be final, and no further rework will be permitted. Areas not ready for re-inspection at the time specified by the Contractor will not be re-inspected, and the results of the first inspection will be final.

**APPENDIX E:
SCHEDULE OF ITEMS
AND
SPECIFICATIONS**

Trapper Forest Health Treatments – 2a/2b

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Item 2a: Hand Thin/Hand Pile

Unit 287

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:

1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.

B. Selection of Cut Trees:

1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.

4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be place on decaying stumps or stobs.

F. CSO PAC SIE0120

1. SIE0120 is located either partially or entirely within the WUI defense or threat zone and will receive mechanical fuels reduction treatments of surface and ladder fuels up to 10 inches DBH consisting of a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and/or pile burning.
2. Treatments within a 500 foot radius buffer around the activity centers within the PAC will be limited to only hand thinning of surface and ladder fuels up to 6 inches DBH. NO HARDWOOD REMOVAL.
3. LOP from March 1st to August 15th shall be maintained annually prohibiting underburning and mechanical activities that generate noise above ambient levels, such as thinning, piling, tree falling and road maintenance, within approximately 0.25 mile of an activity center, unless surveys confirm that California spotted owls are not nesting.
 - a. Landings would not be placed within California spotted owl PACs outside WUI defense zones.
 - b. A biologist would be consulted prior to mechanical treatments within PACs and be available onsite at the onset of operations.
 - c. Landings would only be placed in PACs within WUI defense zones with natural resource specialist approval.

- d. Woodrat nests would be identified prior to implementation and would be protected by leaving pockets of vegetation around the nest.
- e. A 500-foot hand cut only treatment zone would be placed around all California spotted owl activity centers (nest stand or equivalent). No conifers greater than 6 inches DBH would be removed, and no hardwood removal would be allowed.
- f. Prior to underburning in PACs, hand line may be constructed or hand thinning of vegetation and small (i.e., less than 6 inches DBH) trees would occur within approximately 500 feet of nest trees or activity centers, as needed.
- g. Hazardous trees or snags greater than 24 inches DBH would be felled and left in order to recruit large down woody debris up to levels identified as the desired condition for the area. Fallen trees/snags would not be bucked up into small pieces but would be retained as whole logs or large pieces, where feasible.

Unit 289

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 - 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 - 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 - 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 - 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 - 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 - 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 - 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. Selection of Cut Trees:**
 - 1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 - 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags

- 15 feet of Pacific yew > 4" dbh
- No piles should be placed on decaying stumps or stobs.

F. CSO PAC SIE0120

1. SIE0120 is located either partially or entirely within the WUI defense or threat zone and will receive mechanical fuels reduction treatments of surface and ladder fuels up to 10 inches DBH consisting of a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and/or pile burning.
2. LOP from March 1st to August 15th shall be maintained annually prohibiting underburning and mechanical activities that generate noise above ambient levels, such as thinning, piling, tree falling and road maintenance, within approximately 0.25 mile of an activity center, unless surveys confirm that California spotted owls are not nesting.
 - a. Landings would not be placed within California spotted owl PACs outside WUI defense zones.
 - b. A biologist would be consulted prior to mechanical treatments within PACs and be available onsite at the onset of operations.
 - c. Landings would only be placed in PACs within WUI defense zones with natural resource specialist approval.
 - d. Woodrat nests would be identified prior to implementation and would be protected by leaving pockets of vegetation around the nest.
 - e. A 500-foot hand cut only treatment zone would be placed around all California spotted owl activity centers (nest stand or equivalent). No conifers greater than 6 inches DBH would be removed, and no hardwood removal would be allowed.
 - f. Prior to underburning in PACs, hand line may be constructed or hand thinning of vegetation and small (i.e., less than 6 inches DBH) trees would occur within approximately 500 feet of nest trees or activity centers, as needed.
 - g. Hazardous trees or snags greater than 24 inches DBH would be felled and left in order to recruit large down woody debris up to levels identified as the desired condition for the area. Fallen trees/snags would not be bucked up into small pieces but would be retained as whole logs or large pieces, where feasible.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)
3. Perennial (flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (100' on each side of channel edge)

Unit 296

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of

trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. Selection of Cut Trees:**
1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)
- C. Treatment of Brush**
1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.
- D. Pruning**
1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
 2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
 3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.
- E. Hand Pile**
1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
 2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.

3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be place on decaying stumps or stobs.

F. CSO PAC SIE0120

1. SIE0120 is located either partially or entirely within the WUI defense or threat zone and will receive mechanical fuels reduction treatments of surface and ladder fuels up to 10 inches DBH consisting of a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and/or pile burning.
2. LOP from March 1st to August 15th shall be maintained annually prohibiting underburning and mechanical activities that generate noise above ambient levels, such as thinning, piling, tree falling and road maintenance, within approximately 0.25 mile of an activity center, unless surveys confirm that California spotted owls are not nesting.
 - a. Landings would not be placed within California spotted owl PACs outside WUI defense zones.
 - b. A biologist would be consulted prior to mechanical treatments within PACs and be available onsite at the onset of operations.

- c. Landings would only be placed in PACs within WUI defense zones with natural resource specialist approval.
- d. Woodrat nests would be identified prior to implementation and would be protected by leaving pockets of vegetation around the nest.
- e. A 500-foot hand cut only treatment zone would be placed around all California spotted owl activity centers (nest stand or equivalent). No conifers greater than 6 inches DBH would be removed, and no hardwood removal would be allowed.
- f. Prior to underburning in PACs, hand line may be constructed or hand thinning of vegetation and small (i.e., less than 6 inches DBH) trees would occur within approximately 500 feet of nest trees or activity centers, as needed.
- g. Hazardous trees or snags greater than 24 inches DBH would be felled and left in order to recruit large down woody debris up to levels identified as the desired condition for the area. Fallen trees/snags would not be bucked up into small pieces but would be retained as whole logs or large pieces, where feasible.

G. Hydrology

- 1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist

Unit 363

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. **Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 - 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 - 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 - 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 - 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 - 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 - 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 - 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.

B. Selection of Cut Trees:

1. Where no overstory trees exist over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.

12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be placed on decaying stumps or stobs.

F. CSO PAC SIE0119

1. SIE0019 is located in the WUI defense zone, and will have approximately 97 acres of mechanical thinning of surface and ladder fuels up to 14 inches DBH followed by a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and pile burning. Thinning of small trees and general fuels reduction in 97 acres of this PAC is modeled to remove approximately 95 percent of trees less than 6 inches DBH, 50 percent of trees 6 to 10 inches DBH, and 25 percent of trees 10 to 14 inches DBH.

G. Avoidance Area

1. Humboldt lily
 - a. These areas will be identified on project maps and provided to contractors.
 - b. Do not masticate, pile slash or fuels, deck logs or stage equipment or personnel in occurrences.
 - c. Avoid ground disturbance and off-road vehicle use in occurrence.
 - d. Fell trees away from occurrence where feasible.
 - e. Underburning, hand cutting and felling of trees and skidding are acceptable within occurrences.
 - f. No herbicide application will occur within 50 feet of watch list botanical species. Modifications may be made with consultation with the district botanist.

H. Hydrology

1. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)

Unit 422

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

A. Selection of Leave Trees: Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:

1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a

healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment

2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.

B. Selection of Cut Trees:

1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15’ of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20” in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.

6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be placed on decaying stumps or stobs.

F. CSO PAC SIE0119

1. SIE0019 is located in the WUI defense zone, and will have approximately 97 acres of mechanical thinning of surface and ladder fuels up to 14 inches DBH followed by a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and pile burning. Thinning of small trees and general fuels reduction in 97 acres of this PAC is modeled to remove approximately 95 percent of trees less than 6 inches DBH, 50 percent of trees 6 to 10 inches DBH, and 25 percent of trees 10 to 14 inches DBH.
2. LOP (Limited Operational Period): lifted for 2022 and 2023 until 3/1/2023. Surveys to be performed prior to 3/1/2023 to confirm that California spotted owls are not nesting for 2023 and 2024.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist

Unit F01

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of

trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. Selection of Cut Trees:**
1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)
- C. Treatment of Brush**
1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.
- D. Pruning**
1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
 2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
 3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.
- E. Hand Pile**
1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
 2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.

3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be place on decaying stumps or stobs.

F. Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment
3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist

2. Perennial (flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (100' on each side of channel edge)

Unit F02

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. Selection of Cut Trees:**
 1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)
- C. Treatment of Brush**
 1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.
- D. Pruning**
 1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
 2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.

3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15' of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be place on decaying stumps or stobs.

F. Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment
3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist

Unit F04

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. **Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. **Selection of Cut Trees:**
 1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)
- C. **Treatment of Brush**
 1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.
- D. **Pruning**

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15’ of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20” in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4” dbh
 - No piles should be place on decaying stumps or stobs.

F. Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment

3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist

Unit F06

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. **Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. **Selection of Cut Trees:**
 1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)
- C. **Treatment of Brush**

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15’ of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20” in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4” dbh

- No piles should be placed on decaying stumps or stobs.

F. CSO PAC SIE0119

1. SIE0019 is located in the WUI defense zone, and will have approximately 97 acres of mechanical thinning of surface and ladder fuels up to 14 inches DBH followed by a combination of mastication, towed and tracked chipping, hand cutting, hand piling, machine piling, lop and scatter, pruning, and pile burning. Thinning of small trees and general fuels reduction in 97 acres of this PAC is modeled to remove approximately 95 percent of trees less than 6 inches DBH, 50 percent of trees 6 to 10 inches DBH, and 25 percent of trees 10 to 14 inches DBH.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist
2. Perennial (flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (100' on each side of channel edge)

Unit F35

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. Selection of Cut Trees:**

1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15’ of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20” in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.

13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be placed on decaying stumps or stobs.

F. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist
2. Intermittent (Flagged)
 - a. No vegetation removal, fuels treatment, or ground-disturbing activities will occur within riparian buffers (50' on each side of channel edge)

Unit F48

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. **Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. **Selection of Cut Trees:**

1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1” diameter up to and including 10" in diameter.
2. All activity slash created by thinning operation exceeding 1 foot in length will be piled and all material will be cut into sections no longer than 4 feet in length.
3. Piles shall be placed on the most dominant cut tanoak stump to assist in the suppression of tanoak sprouts. If no tanoak stump exists within 15’ of cutting, piles should be located outside the dripline of overstory trees where possible. If it is not possible then the size of the pile can be reduced to prevent damage to residual stand (i.e. Scorching) but shall not decrease to less than 4 feet in diameter and 4 feet tall.
4. Do not locate piles within 15 feet of existing downed logs greater than 20” in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.

13. No piles will be placed within:

- 10 feet from edge of stream channels
- 25 feet of private property boundaries.
- 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
- 25 feet of any power lines or phone lines
- 15 feet of standing snags
- 15 feet of Pacific yew > 4" dbh
- No piles should be placed on decaying stumps or stobs.

Unit F56

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

A. Selection of Leave Trees: Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:

1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.

B. Selection of Cut Trees:

1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)

C. Treatment of Brush

1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles

(i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.

D. Pruning

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
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4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
8. The minimum pile size will be 4 feet in diameter, but not to exceed 10 feet in diameter. The pile diameter will be symmetrical to each side, in a circle shape.
9. All piles will be covered with a minimum 6-millimeter (thickness) plastic sheeting and firmly anchored by either piling slash or other debris. The plastic shall cover a minimum of 80% of the pile surface area. Covering with plastic will be done at the time of piling. See piling schematic.
10. The minimum distance between piles will be one and a half times the pile height.
11. All material will be contained within the general contour of the pile and any material protruding out 2 feet or more will be sawed off and placed back on the pile.
12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be place on decaying stumps or stobs.

F. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist

Unit F70

Manual removal of small trees less than 10 inches diameter at breast height (except within designated PACs) and hand piling of cut material and surface fuels to reduce surface and ladder fuels. Pruning of trees will occur in order to increase canopy base heights. This would reduce the risk of prescribed fire or wildfire fire moving into the tree crowns.

- A. **Selection of Leave Trees:** Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. The Contractor shall select leave tree using the following priorities:
 1. **Space residual trees 25 feet apart between boles.** Select leave trees from healthy, undamaged hardwoods and conifers. Hardwoods will supersede conifers when leaving a healthy leave tree. Spacing will supersede the diameter limit when setting priority of treatment
 2. Selected leave trees should be the tallest, best formed, disease free, insect free, and damage free trees available. Leaving slightly damaged trees when these are the best available to meet spacing requirements is acceptable.
 3. Species retention is (in order of preference): sugar pine, ponderosa / Jeffery pine, Douglas-fir, incense-cedar, lodgepole pine, white fir.
 4. Avoid damaging and retain big leaf maple, elderberry, dogwood, Pacific yew, and California Hazelnut.
 5. Avoid damaging and do not cut or remove black oak or madrone greater than 9 inches in DBH. Trees of this species less than 9 inches in DBH can be cut.
 6. Leave all alders and other riparian vegetation within and adjacent to stream beds (wet or dry). Conifer and other brush species (manzanita, whitethorn) will be removed from these areas.
 7. Cut stumps of trees and brush so that they are no more than 4 inches in height on the high side of the stump. Make the residual stand easy to walk through and cut stumps low so they are not a tripping hazard.
- B. **Selection of Cut Trees:**
 1. Where no overstory trees exists over 10 inches DBH, thin trees to an average 25 foot spacing and cut all remaining vegetation per specifications.
 2. Where an overstory exists, cut all conifer trees less than 10 inches at DBH that do not meet the definition of a leave tree while observing spacing requirements, except those specified to be left within each designated unit or within designated PACs. (Leave trees shall generally be those of the tallest height, largest crown, and straightest boles that are free of damage due to insects, disease, physical and mechanical causes. If no tree meets this selection criteria, leave the largest and tallest tree with minimal damage.)
- C. **Treatment of Brush**
 1. All brush within the work areas shall be cut with the exception of hazelnut and noxious weeds. All brush treated shall be cut within 4 inches of the ground or 4 inches of obstacles (i.e. rocks, down logs) and no leaves shall remain attached to the portion remaining in the ground.
- D. **Pruning**

1. All leave trees shall be pruned of lateral branches to at least 6 feet from the ground or 2/3 the height of the tree (whichever is less).
2. Pruning cuts shall be made no closer than ½ inch and no farther than 2 inches from the bole of leave trees.
3. Pruning will be done by first making a cut on the underside of the branch and then severing the branch from above to reduce injury to the branch collar.

E. Hand Pile

1. Slash to be piled generally constitutes material from 1" diameter up to and including 10" in diameter.
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4. Do not locate piles within 15 feet of existing downed logs greater than 20" in diameter without COR/inspector approval.
5. Piles shall be constructed by hand to facilitate full consumption when they are burned.
6. All piles shall be built and compacted by laying limbs, stems, cut boles, and other slash so there are minimal air spaces.
7. Each pile shall include an area of kindling for prompt ignition and to aid in combustion of larger slash. These fuels shall be placed in the center or bottom of the pile. The piles will be constructed so that they will burn after a snow event or rainstorm.
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10. The minimum distance between piles will be one and a half times the pile height.
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12. Piles shall be located so that burning will not damage standing live trees or physical improvements such as fences, poles, buildings, signs, tables, grills or cattle-guards.
13. No piles will be placed within:
 - 10 feet from edge of stream channels
 - 25 feet of private property boundaries.
 - 25 feet of improvements such as, but not limited to, fences, gates, signs or water lines or tanks.
 - 25 feet of any power lines or phone lines
 - 15 feet of standing snags
 - 15 feet of Pacific yew > 4" dbh
 - No piles should be place on decaying stumps or stobs.

F. Avoidance Areas

1. Avoid any invasive plant infestation that has not been treated prior to implementation
2. Coordinate with district botanist at least 60 days before implementation to plan treatment

3. These areas will be flagged in the field & identified on project / contractor maps
4. Do not underburn or masticate broom infestations.
5. Limit fuels treatments to hand cut and pile burn within scotch broom infestations. Time hand cutting of broom to late summer to minimize resprout potential.

G. Hydrology

1. Ephemeral (not flagged)
 - a. Hand work can occur within riparian buffer as well as hand piles up to 10' from stream channel
 - i. Piles in ephemeral channels to be avoided when possible
 - ii. 40' between piles in riparian buffer or as approved by SOR and specialist

Item 2b: Fire Line Construction Around Units

Following piling, fire line shall be constructed around all sides of each unit. The contractor will construct prescribed fire control line to include a saw line cut to a minimum width of 15 feet, and a hand line, dug to a depth of bare mineral soil and to a width of two feet. The hand line will be constructed within the saw line so that five feet of saw line extends on the side opposite the hand piles (green side) from the hand line, and 10 feet of saw line extends out from the hand line to the side with the hand piles (black side).

1. Saw line: The contractor is to create a saw line by cutting, clearing, and removing surface, ladder, and standing fuels in order to create a continuous, saw cut fuel break, to the width of 15 feet. From within this saw line, the contractor will cut and remove the following material;
 - a) All dead and down material larger than 2 inches in diameter.
 - b) All standing dead less than 16 inches in diameter.
 - c) All green trees smaller than 8 inches in diameter.
 - d) All shrubs and bushes, both live and dead.
 - e) Prune all green trees larger than 8 inches in diameter to a height of six feet off the ground.
2. Hand line: Within the saw line, the contractor will create a fire break using hand tools to dig down to a depth to reach bare mineral soil, and to a width of two feet. All flammable material should be removed during the construction, leaving only non-flammable, bare mineral soil.
3. The contractor will construct a 1 foot wide handline down to bare mineral soil around any snags or large stumps located near the line that cannot be removed.
4. Handline designation will be available to the contractor via Avenza maps. If contractor does not have Avenza maps handline will be flagged in fluorescent pink.

Guidelines for Operation

Contractor Responsibility: The Contractor shall provide everything--including, but not limited to, all equipment, supplies, transportation, labor, and supervision--necessary to complete the project, except for that which the contract clearly states is to be furnished by NFF.

Accessibility: Most sub-items are accessible with a 2-wheel drive vehicle after snowmelt. NFF assumes no liability to perform special road maintenance to keep roads open to the project area.

Contractor-Furnished Equipment: Equipment shall be furnished on a fully operational basis, of modern design, and in good operating condition, with a competent, fully qualified operator. The Contractor shall furnish all fuel, lubricants, and personnel necessary for the operation of the equipment. All repairs, service and replacements are the responsibility of the Contractor and shall be at the Contractor's expense. If, during the contract period, the equipment requires repairs

before operations can continue, it shall be the responsibility of the Contractor to complete such repairs. The Contractor shall provide plastic that is at a minimum 6 millimeter thick.

Public Safety

The contractor shall provide for public safety when operating equipment within 200 feet of open roadways and designated trails by posting cautionary signs warning of hazardous work ahead. ***Warning signs (at least two, one for each direction) shall be posted on roads. These shall be located 200' from the intersection of the road and unit boundary at each edge of the unit. Signs shall be posted whenever working to alert oncoming traffic of the safety hazards associated with the operation. Any trails in the project area must also be signed. Signs shall include phrases similar to "Caution, tree falling stay back 200 feet" and be no less than 3 feet X 3 feet in size. Lettering shall be at least 6 inches in height.***

Project Boundary Description:

The perimeters of sub-items will be partially flagged with orange and black-striped flagging and other areas of the sub-items will be identified with a single piece of flagging. In some cases, roads may make up part of the boundary of the unit and therefore these parts of the unit boundary may or may not be marked or flagged. The project maps are intended to show the general shape and location of the work areas. The map is not intended to be accurate as to precise location and dimension. If the map and field boundaries conflict, the field boundaries shall govern. Positions of streams and topographic features, when shown, also may be approximate.

Protected Sites and Exclusions (non-work areas): The following shall be excluded or protected:

1. **No hand piling** will be permitted within 10 feet of the banks of **stream channels and waterbodies**.
2. **Cultural resource sites** within the project area will be flagged with blue and black stripe flagging and avoided.
3. **Sensitive plant avoidance areas** will be flagged in advance of treatment with orange and white-striped flagging. These areas will not be treated and are to be completely avoided during all activities, including staging of equipment, materials and crew as well as tree felling activities.
4. **Noxious weed** infestations will be marked with orange flagging with the words "Noxious Weed" in black prior to commencement of work. These areas will not be treated and are to be completely avoided during all activities, including staging of equipment, materials and crew as well as tree felling activities.

Applicable Management Requirements

1. Avoid damaging and retain elderberry, dogwood, California hazelnut, and Pacific yew.
2. Establish a 100-foot "riparian buffer" zone along each side of perennial streams and special aquatic features, 50-foot "riparian buffer" along each side of intermittent streams and establish a 10-foot "riparian buffer" zone along each side of ephemeral streams. These zones provide for shade and coarse large woody debris (CWD) to the stream channel and adjacent land. (Note: The Reservoir edge is included in the 100-foot perennial buffer.)

3. Unless otherwise agreed to by the Hydrologist, Botanist, and the Aquatic Biologist, no ground-disturbing activities will occur within riparian buffers. To recruit downed logs and minimize disturbance within riparian areas and to riparian species, fall and leave hazard trees within the riparian buffer.
4. All equipment and vehicles used for project implementation must be free of invasive plant material before moving into the project area. Equipment will be considered clean when visual inspection does not reveal soil, seeds, plant material or other such debris. Cleaning shall occur at a vehicle washing station or steam-cleaning facility before the equipment and vehicles enter the project area. Equipment used during emergency work or used exclusively on paved surfaces is exempt from the cleaning requirement. When working in known invasive plant infestations, equipment shall be cleaned before moving to other National Forest Service system lands.
5. Avoid disturbance and do not stage equipment in known invasive plant infestations. Invasive plant infestations will be avoided during equipment traffic and soil-disturbing project activities. Avoidance areas will be identified on project maps.
6. **Survey monuments and bearing trees** shall be protected and not damaged in any way.
7. **All specified roads and recreational trails shown on contract maps** shall be left in the original condition existing prior to the commencement of work on this contract. Any water bars in skid trails disturbed by the Contractor's operations shall be restored to the condition prior to damage at the Contractor's expense. Excessive slash and chips cannot be left in the roadways and recreational trails after end of each work day. **All cut vegetation shall be kept within unit boundaries. If slash is fell onto the roadways, it must be removed by the end of each workday.**
8. Servicing and refueling equipment areas shall be located at a minimum of 300 feet from streams and other wet areas. In case of a HAZMAT spill, the material shall be immediately contained and NFF shall be immediately notified.
9. Avoid piling within the drip line of large trees (conifers & hardwoods), snags, and large downed logs
10. Within the sub-item boundaries, NFF may exclude non-work areas such as: rocky areas, wildlife areas, and other special areas. The Contracting Officer's Representative will designate non-work areas. Such areas exceeding 1/2 acre in size per unit may be excluded from payment.

Flagging Identification:

- Boundary: Black & Orange Striped
- Cultural Sites: Blue & Black Striped
- LOP: Black & Orange Striped
- Botany (Sensitive Plants and Noxious Weeds): Orange & White Striped with Black "Special Treatment" Lettering

Required Training:

Environmental awareness training will be conducted to contract representatives, Contract Officers, project managers, and field personnel prior to the onset of project work. Training will include a briefing on the following: (a) How to recognize Sierra Nevada yellow-legged frogs, (b) The specific measures that are being implemented to conserve the species, (c) The penalties for non-compliance, (d) If a Sierra Nevada yellow-legged frog is encountered in the work area, work activities in that area shall cease until the species has moved from the area on its own volition, or a U. S. Fish and Wildlife Service-approved biologist moves the individual in accordance with Forest Service approved procedures. If any injured or killed Sierra Nevada yellow-legged frogs are found, work activities will immediately cease in the area, and the COR or approved biologist will be notified as soon as possible to take appropriate action, which includes notification within 24 hours to the U. S. Fish and Wildlife Service.

Restrictions on Work:

Work may be performed at any time during the period of the contract, except as outlined here. Restrictions are as follows:

1. In accordance with the fire plan, included in Appendix H.
2. When the Contracting Officer (or designated representative) determines that adverse weather has made access too dangerous or that continued vehicular travel would cause unacceptable road damage.
3. When the Contracting Officer (or designated representative) determines that continued operation may be injurious to leave trees.
4. If any Sierra Nevada yellow-legged frog is found at any time during implementation of this Project, cease operations in the vicinity of the frog, vacate the immediate area and leave the frog along. If possible, take a photograph of the frog as follows: top looking down, and side view. No activity will occur in that area until such time as the frog has vacated the area on its own volition. With the exception of a U. S. Fish and Wildlife Service approved biologist, do not handle Sierra Nevada yellow-legged frogs. Report the occurrence as soon as possible to the COR or Designated Representative.
5. In units with an LOP for California spotted owl, no work shall occur from March 1 – August 15.

Definitions:

Aggregation – A pocket of densely packed trees distinct from adjacent areas within a project unit. It is characteristic for trees within aggregations to have a higher percent of ***phenotypic defects*** due to competition for resources in close proximity to others.

Brush – all woody shrub species such as manzanita, whitethorn, deerbrush, dwarf tanoak, silktassel and ribes. For the purposes of this contract bear clover, snowberry, prostrate manzanita and squaw carpet are not considered brush.

Conifer - A cone-bearing tree with needles or leaf scales (e.g. pine, fir, cedar).

Co-dominant Tree - A tree with the crown forming the general level of the crown cover and receiving full light from above, but comparatively little from the sides.

C.O.R. - Contracting Officer's Representative.

Crop Tree (Leave Tree) - Any crop tree without excessive damage, which has a live crown ratio of greater than 30%. The top will not be dead, broken, or forked.

Damaged tree – Any crop tree with one or more of the following injuries:

1. Any true fir that has any bark cut or removed to the cambium regardless of the amount.
2. Any other tree species that has bark cut or removed to the cambium from more than 25% of the circumference of the bole.
3. Any tree that has a broken, forked, or dead top.
4. Any tree that has had 25% or more of the live limbs or branches broken or removed by any operation.
5. Defects, which include sweeps in the bole and crooked boles.

DBH - Diameter at breast height; the diameter of a tree measured at a point 4-1/2 feet above the ground on the uphill side of the tree.

Diseased Trees – Any tree greater than two feet tall with a diameter less than ten inches at DBH with one or more of the following diseases:

1. **Mistletoe:** Trees with one or more visible infections on any part of the live crown or stem.
2. **Gall Rust:** Trees with one or more visible cankers on the bole or multiple cankers on the limbs in the green crown.
3. **Chlorosis:** Trees with off color foliage, weak root system and otherwise exhibiting a general unhealthy appearance.
4. **Damage:** Tree that exhibits insect infestation, severe mechanical, animal, or other damages (i.e. trees leaning severely).
5. **White Pine Blister Rust:** On sugar pine, stem / branch cankers, yellow to red flagging of branches and tops.

Dying Tree – 50% or more of the foliage-bearing crown is recently dead and/or 75% or more of the circumference of the lower bole is girdled by wildlife.

Excess Tree - A tree that is left but should have been cut to meet standards.

Foliage – Tree/plant leaves.

Forked Trees – Trees with one or more forks in the live crown or with old dead or broken-out tops within 13 feet of the ground.

Girdled – A cut through the tree bark or branch all the way around.

Hang-up Tree – A cut tree suspended above the ground by a leave tree.

Hardwood – A tree with broad leaves rather than needles (e.g., oak, madrone, big leaf maple, elderberry, dogwood, etc.)

Insect Infested Tree – A tree pitching sap from the bark in multiple spots on the bole, frass in cracks of bark or at base of tree, dead or fading top.

Limited Operating Period (LOP) – This indicates there is a limited period in which operations may NOT occur for a particular work unit. This period is variable based on the species being protected. See the Schedule of Treatments for the definition of each LOP.

Live Crown Ratio – The percentage of the live limbs in relation to the total tree height.

Invasive plants (Noxious Weeds) - For the purpose of this contract, the following list refers to species on the Tahoe National Forest Invasive Plant List, last updated 05/01/2017, namely:

Scientific Name	Common Name
<i>Acroptilon repens</i>	Russian knapweed
<i>Aegilops triuncialis</i>	barbed goatgrass
<i>Ailanthus altissima</i>	tree-of-heaven
<i>Arundo donax</i>	giant reed
<i>Bromus tectorum</i>	cheatgrass
<i>Berteroa incana</i>	hoary alyssum
<i>Carduus nutans</i>	musk thistle
<i>Carduus pyconocephalus</i>	Italian thistle
<i>Centaurea diffusa</i>	diffuse knapweed
<i>Centaurea melitensis</i>	Maltese starthistle
<i>Centaurea solstitialis</i>	yellow starthistle
<i>Centaurea stoebe</i>	spotted knapweed
<i>Chondrilla juncea</i>	skeletonweed
<i>Cirsium arvense</i>	Canada thistle
<i>Cortaderia selloana</i>	pampasgrass
<i>Cytisus scoparius</i>	scotchbroom

<i>Dittrichia graveolens</i>	stinkwort
<i>Elymus caput-medusae</i>	medusahead
<i>Euphorbia oblongata</i>	oblong spurge
<i>Foeniculum vulgare</i>	fennel
<i>Genista monspessulana</i>	French broom
<i>Hydrilla verticillata</i>	hydrilla
<i>Isatis tinctoria</i>	dyer's woad
<i>Lepidium chalepensis</i>	lenspod whitetop
<i>Lepidium draba</i>	whitetop
<i>Lepidium latifolium</i>	tall whitetop
<i>Linaria dalmatica</i> ssp. <i>dalmatica</i>	Dalmatian toadflax
<i>Lythrum salicaria</i>	purple loosestrife
<i>Myriophyllum spicatum</i>	Eurasian water milfoil
<i>Onopordum acanthium</i>	Scotch thistle
<i>Phalaris arundinacea</i>	reed canary grass
<i>Rubus armeniacus</i>	Himalayan blackberry
<i>Spartium junceum</i>	Spanish broom
<i>Ulex europaeus</i>	gorse

Phenotypic Defects - Referring to inherited defects or deficiencies caused by local environmental conditions. Examples: Trees with flat top shapes having under 4 inches of leader growth (measure of previous year), forked or multiple tops, twisting in the limbs bole and trees with sweeping, leaning or drooping forms.

Riparian Conservation Area (RCA) – Areas adjacent to streams, ponds, and springs protected by limiting treatments in some situations. RCA's are as follows:

- Perennial streams = 300 feet each side of channel
- Seasonal (Intermittent and Perennial) = 150 feet each side of channel
- Streams in Inner Gorge = Top of inner gorge
- Special Aquatic Features (meadows, lakes, and springs) = 300 feet from edge of feature or riparian vegetation, whichever is greatest.

Scour Zone – The zone where moving water runs-off and removing any surface cover down to bare mineral soil.

Slash - All debris resulting from operations including stems, limbs and tops of trees, and brush.

Suppressed Tree - Any tree with less than 30% of its total height in live green crown or with less than 4 inches of current leader growth.

Thinning - The cutting of trees to meet the short term desired condition.

True fir – This classification refers to the conifer species red fir & white fir.

Inspection

Inspection of Services--Fixed-Price

1. Sampling

Plots. At least one percent of each treatment area will be sampled by a random series of plots distributed over the entire area. Plot size will be:

1/250 acre

1/100 acre

1/50 acre

1/10 acre

other (specify)

Transects.

Other (specify)

1/50 acre plot is a circular plot measured on a horizontal plane having a radius of 16.7 feet.

2. Specific Inspection Procedures

Each plot will be inspected to determine:

A. The number of trees left uncut per specification in APPENDIX E. If any trees are left uncut per specifications or with too high of stump, the plot fails.

B. The number of brush left uncut per specification in APPENDIX E. If more than 1 shrub is left uncut or left with too high stump the plot will fail.

C. Pruning will be inspected for adherence to specification in APPENDIX E. If more than 2 branches per this spec is left the plot will fail.

D. Tracked chipping will be inspected per specifications in APPENDIX E. If chipped material exceeds 6 inches in depth throughout the entire plot and/or chipped material is distributed within the riparian area, the plot will fail.

E. Mastication will be inspected per specification in APPENDIX E.

F. The nearest hand pile to the plot center will also be inspected (even if it is out of the plot). The hand pile must meet all specifications as stated in APPENDIX E or the hand pile inspection fails.

G. Any vegetation cut per specification 8-2.2 and 8-2.5 **Trees, shrubs, and other Plants to be Left Untreated** will be charged under liquidated damages.

Work will be accepted for payment on the basis of final inspection and passage of specification. NFF or the Forest Service will inspect for compliance of specifications. Plots will be located throughout the sub-items so as to obtain a representative sample of the area. Sub-items will be inspected separately and not combined for the purpose of determining percent of satisfactory work.

A series of 1/50-acre plots (16.7 foot plot radius) distributed over the entire unit sufficient to yield at least a one-half on one percent sample (0.5%) will be taken. Plot centers will be marked.

On each plot the NFF or the Forest Service will record the plot number, whether the plot is satisfactory or unsatisfactory and the reason if unsatisfactory. Each plot will be examined to record findings on the items "1" through "10" listed below. To be considered satisfactory these items must meet the following criteria:

Performance Measures for Hand Cutting, Tracked Chipping, and Mastication

Each of these gets a rating of 1 with a total of 10 possible points.

1. Selection of leave trees (species priority and dbh)
2. Spacing of residual trees
3. Stumps of trees and brush so that there are no more than 3" to 6" remaining.
4. Prune branches of all remaining conifers to 6-10 feet in height
5. Mastication and tracked chipping is completed to specifications
6. No damage to residual trees
7. Any treated material that falls outside of unit boundary needs to be removed and hand piled.

Performance Measures for Hand Piling (Sub Items)

8. Placement/location of pile
9. Dimension and structure of pile (includes clearing around piles and material in piles is less than 4' in length)
10. Plastic utilization/placement

3. Acceptance

Work on this contract will be deemed acceptable when a score of 9 points or more is achieved. The unit may be reworked ONCE and then re-inspected. This re-inspection score will be the final result for payment on that unit, (see re-inspection after rework below). Some of the units in this contract are so large, plots will be installed as work progresses and the Contractor will be notified of inspection results that are not satisfactory as they are found.

4. NFF Inspections

NFF inspections are for the purpose of satisfying the Forest Service that the services are acceptable and do not relieve the Contractor of the responsibility for maintaining quality control.

NFF or the Forest Service will conduct all inspections. The Contractor (or designated representative) is encouraged to be present to observe inspections. Summary results will be made available on request.

Compliance Inspections.

Visual compliance inspections will be made on a periodic basis. Such inspections are not final and do not constitute acceptance by the NFF.

Final Inspections.

Final (formal) inspections for payment will be made on completed sub-items only. Contractor shall request final inspections in writing and give NFF at least two working days advanced notice. Inspections will be completed within four working days after the notice is received. If the work is not ready for inspection at the time specified by the Contractor, the cost associated with the inspection attempt may be charged to the Contractor.

Disputed Inspection.

The Contractor may request re-inspection without rework if the results are unacceptable. Re-inspection must be requested in writing within 48 hours after receiving written notice of the inspection results. Re-inspection will be accomplished within five working days after receipt of the contractor's written request.

The same sampling and inspection procedures will be used, but new samples will be taken. The inspection pattern will be shifted so that new samples will not overlap previously inspected samples. Results will be rounded to the nearest whole percent.

If re-inspection results are within five percentage points of the first inspection, the original inspection result will be used in determining acceptability and payment. If re-inspection results are greater than five percentage points above or below the first inspection, the re-inspection results will be used.

If the re-inspection results are within five percentage points of the first inspection, the Contractor shall pay the actual costs of the re-inspection.

Re-inspection after Rework.

Where rework after a failed inspection may improve the inspection results, the Contractor may rework the area and request (in writing) a second inspection. Re-inspection will be accomplished within five working days after the notice is received. The results of the second inspection will be final, and no further rework will be permitted. Areas not ready for re-inspection at the time specified by the Contractor will not be re-inspected, and the results of the first inspection will be final.

**APPENDIX H: US FOREST SERVICE REGION 5
FIRE PLAN FOR MANUAL SERVICE CONTRACTS
Ver. 01/22/2020**

1. **SCOPE:**

The provisions set forth below outline the responsibility for fire prevention and suppression activities and establish a suppression plan for fires within the contract area. The contract area is delineated by map in the contract. The provisions set forth below also specify conditions under which contract activities will be curtailed or shut down.

This fire plan is to be used for projects with no heavy machinery operating within the contract area. A wood chipper that remains on Forest Service roads may be covered under this fire plan at the discretion of the District Fire Management Officer.

2. **RESPONSIBILITIES:**

A. Contractor

- (1) Shall abide by the requirements of this Fire Plan.
- (2) Shall take all steps necessary to prevent his/her employees, subcontractors and their employees from setting fires not required in completion of the contract, shall be responsible for preventing the escape of fires set directly or indirectly as a result of contract operations, and shall extinguish all such fires which may escape.
- (3) Shall permit and assist in periodic testing and inspection of required fire equipment. Contractor shall certify compliance with specific fire precautionary measures in the fire plan, before beginning operations during Fire Precautionary Period and shall update such certification when operations change.
- (4) Shall designate in the Fire Plan and furnish on Contract Area, during operating hours, a qualified fire supervisor authorized to act on behalf of Contractor in fire prevention and suppression matters.

B. Forest Service

The Forest Service may conduct one or more inspections for compliance with the Fire Plan. The number, timing, and scope of such inspections will be at the discretion of agency employees responsible for contract administration. Such inspections do not relieve the Contractor of responsibility for correcting violations of the fire plan or for fire safety in general, as outlined in paragraph 2.A above.

3. **DEFINITIONS:**

The following definitions shall apply:

Active Landing: A location the contractor may be skidding logs into, or performing other operations such as delimiting, log manufacturing, and chipping logs. Except for EV and E days, loading logs or stockpiling chips only, on a cleared landing, does not constitute an Active Landing.

Fire Tools: Shovels, pulaskis McLeods, axes and chainsaws.

Hot Saw: A harvesting system that employs a high-speed (>1100 rpm) rotating felling head, i.e., full rotation lateral tilt head.

Mechanical Operations: The process of felling, skidding, chipping, shredding, masticating, piling, log processing and/or yarding which requires the use of motorized power which includes, **chainsaws**, chippers, motorized carriages, masticators, stroke delimiters, skidders, dozers etc.

4. **TOOLS AND EQUIPMENT:**

The Contractor shall comply with the following requirements during the fire precautionary period, as defined by unit administering contracts:

The Fire Precautionary Period is set by the State of California which is April 1 through December 1 of any year.

- This contract requires, does not require, a **Fire Box and associated Fire Tools according to CPRC Section 4428.**

A. Fire Tools and Equipment: Contractor shall meet minimum requirements of Section 4428 of the California Public Resources Code (C.P.R.C.) The contractor have sufficient fire tools to supply each contractor employee in the event of a fire. No more than one in four of these tools shall be a chainsaw. All tool heads shall be secure, all handles shall not be cracked or damaged operable and sufficient fuel for three hours of operation shall be on sight.

B. Power Saws: Each power saw shall be equipped with a spark arrester approved according to C.P.R.C. Section 4442 or 4443 and shall be maintained in effective working order.

- This contract requires, does not require, **Section 4C of the Fire Plan**

C. Backpack Pump: When Project Activity Level C or higher is in effect the following shall be required. Each power saw shall have a 5-gallon backpack pump or can with hand pump within 300 feet of the operating power saw when used off cleared landing areas. Each operating wood chipper shall also be equipped with a 5 gallon backpack pump or can with hand pump.

- This contract requires, does not require, **Section 4D of the Fire Plan**

D. Fire Extinguishers: When Project Activity Level C or higher is in effect the following shall be required. An Underwriters Laboratories (UL) approved fire extinguisher containing a minimum 14 ounces of fire retardant shall be kept with each operating power saw and a minimum 5-pound fire extinguisher shall be equipped on any operating wood chipper. In addition, a size 0 or larger shovel with an overall length of not less than 38 inches shall be kept with each gas can or wood chipper but not more than 300 feet from each power saw when used off cleared landing areas.

- This contract requires, does not require, **Section 4E of the Fire Plan**

E. Tank Truck or Trailer: Contractor shall provide a **water tank truck or trailer** on or in proximity to Contract Area during Contractor's Operations hereunder during Fire Precautionary Period. When Project Activity Level C or higher is in effect, a tank truck or trailer shall be on or immediately adjacent to each active landing, unless otherwise excepted when Hot Saws or Masticators are being used. See Section 6 for specific contract requirements.

The tank shall contain at least 300 gallons of water available for fire suppression. Ample power and hitch shall be readily available for promptly and safely moving tank over roads serving Contract Area. Tank truck or trailer shall be equipped with the following:

- (1) Pump, which at sea level, can deliver 23 gallons per minute at 175 pounds per square inch measured at the pump outlet. Pumps shall be tested on Contract Area using a 5/16 inch orifice in the Forester One Inch In-Line Gauge test kit. Pump shall meet or exceed the pressure value in the following table for nearest temperature and elevation:

Temp	Sea Level		1000 Feet		2000 Feet		3000 Feet		4000 Feet		5000 Feet		6000 Feet		7000 Feet		8000 Feet		9000 Feet		10000 Feet			
	55	70	85	100	55	70	85	100	55	70	85	100	55	70	85	100	55	70	85	100	55	70	85	100
55	179	23	174	23	169	23	165	22	161	22	157	22	153	22	150	21	146	21	142	21	139	21		
70	175	23	171	23	166	22	162	22	158	22	154	22	150	21	147	21	143	21	139	21	136	20		
85	171	23	168	23	163	22	159	22	155	22	151	21	147	21	144	21	140	21	136	20	133	20		
100	168	23	164	23	159	22	155	22	152	22	148	21	144	21	141	21	137	20	133	20	131	20		

P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G	P	G
S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P	S	P
I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M	I	M

The pump outlet shall be equipped with 1-1/2 inch National Standard Fire Hose thread. A bypass or pressure relief valve shall be provided for other than centrifugal pumps.

- (2) 300 feet of 3/4-inch inside diameter rubber-covered high-pressure hose mounted on live reel attached to pump with no segments longer than approximately 50 feet, when measured to the extreme ends of the couplings. Hose shall have reusable compression wedge type 1-inch brass or lightweight couplings (aluminum or plastic). One end of hose shall be equipped with a coupling female section and the other end with a coupling male section. The hose shall, with the nozzle closed, be capable of withstanding 200 PSI pump pressure without leaking, distortions, slipping of couplings, or other failures.
- (3) A shut-off combination nozzle that meets the following minimum performance standards when measured at 100 P.S.I. at the nozzle:

	G.P.M.	Horizontal Range
Straight Stream	10	38 feet
Fog Spray	6 - 20	N/A

- (4) Sufficient fuel to run the pump at least 2 hours and necessary service accessories to facilitate efficient operation of the pump.

When Contractor is using Hot Saws or Masticators, an additional 250 feet of light weight hose, approved by the Forest Service, shall be immediately available for use and be capable of connecting to the 300 feet of hose and appurtenances in (2) and (3) above.

This equipment and accessories shall be deliverable to a fire in the area of operations and is subject to the requirements for each specific activity level identified in Section 6.

F. Compressed Air Foam System: A Compressed Air Foam System (CAFS) is a fire suppression system where compressed air is added to water and a foaming agent. By agreement, Contractor may substitute a CAFS or functional equivalent in lieu of the tank truck, trailer or fire extinguishers, provided it meets or exceeds the following specifications and requirements:

- 1. Variable foam expansion ratio – 10:1 to 20:1.
- 2. Units shall be kept fully charged with air; water and foam concentrate as recommended by the manufacturer and have the appropriate tools to service the system.
- 3. The unit shall contain enough energy to empty tank and clear hose prior to exhausting propellant.
- 4. The unit shall be capable of being completely recharged within 10 minutes.
- 5. When used on cable yarding landings, the unit shall be outfitted for immediate attachment to carriage and transported without damage to the unit.

Fire extinguishers required for Hot Saws, Masticators and similar equipment identified in Section 4 B. above may be substituted with a 3 gallon CAFS.

Tank truck, trailer or equivalent may be substituted with a 30 Gallon CAFS with at least 550 feet of one inch hose and an adjustable nozzle with enough water, air and foam concentrate for at least one recharge.

This equipment and accessories shall also be deliverable to a fire in the area of operations and subject to the requirements for each specific activity level identified in Section 6.

5. GENERAL

- A. **State Law:** In addition to the requirements in this Fire Plan, the Contractor shall comply with all applicable laws of the State of California. In particular, see California Public Resource Codes.
- B. **Permits Required:** The Contractor must secure a special written permit from the District Ranger or designated representative before burning, welding or cutting metal or starting any warming fires. If contract requires Blasting and Storing of Explosives and Detonators, an Explosives Permit may be required pursuant to the California Health and Safety Code, Section 12101.
- C. **Blasting:** Contractor shall use electric caps only unless otherwise agreed in writing. When blasting is necessary in slash areas, a Fire Patrolperson equipped with a size 0 or larger shovel with an overall length of not less than 46 inches and a filled backpack can (4 or 5 gallon) with hand pump shall remain in the immediate area for an hour after blasting has been completed.
- D. **Smoking:** Smoking shall not be permitted during fire season, except in a barren area or in an area cleared to mineral soil at least three feet in diameter. In areas closed to smoking, the CO may approve special areas to be used for smoking. The Contractor shall sign designated smoking areas. Contractor shall post signs regarding smoking and fire rules in conspicuous places for all employees to see. Contractor's supervisory personnel shall require compliance with these rules. Under no circumstances shall smoking be permitted during fire season while employees are operating light or heavy equipment, or walking or working in grass and woodlands.
- E. **Storage and Parking Areas.** Equipment service areas, parking areas, and gas and oil storage areas shall be cleared of all flammable material for a radius of at least 10 feet unless otherwise specified by local administrative unit. Small mobile or stationary internal combustion engine sites shall be cleared of flammable material for a slope distance of at least 10 feet from such engine. The COR shall approve such sites in writing.
- F. **Reporting Fires:** As soon as feasible but no later than 15 minutes after initial discovery, Contractor shall notify Forest Service of any fires on Contract Area or along roads used by Contractor. Contractor's employees shall report all fires as soon as possible to any of the following Forest Service facilities and/or personnel listed below, but not necessarily in the order shown:

	Name	Office Address	Office telephone
Dispatch Center	Grass Valley Emergency Command Center (GVECC)	13120 Loma Rica Dr. Grass Valley, CA 95945	911 or 530-477-5853
Nearest FS Station			
Inspector (s)			
COR			
District Ranger	Alonzo Henderson	15924 Hwy 49 Camptonville, CA 95922	(530) 478-6253 (530) 288-3231

When reporting a fire, provide the following information:

- Your Name
- Call back telephone number
- Project Name
- Location: Legal description (Township, Range, Section); and Descriptive location (Reference point)
- Fire Information: Including Acres, Rate of Spread and Wind Conditions.

▪ This contract requires, does not require, Section 5G of the Fire Plan.

- G. **Communications:** Contractor shall furnish a serviceable telephone, radio-telephone or radio system connecting each operating side with Contractor's headquarters. When such headquarters is at a location which makes communication to it clearly impractical, Forest Service may accept a reasonable alternative location. The communication system shall provide prompt and reliable communications

between Contractor's headquarters (or agreed to alternative) and Forest Service via commercial or Forest Service telephone.

▪ This contract requires, does not require, Section 5H of the Fire Plan.

H. Fire Patrolperson: Contractor shall furnish a qualified fire patrolperson each operating day when Project Activity Level C or higher is in effect. When on duty, sole responsibility of patrolperson shall be to patrol the operation for prevention and detection of fires, take suppression action where necessary and notify the Forest Service as required. This Fire patrol is required on foot, unless otherwise agreed. By agreement, one patrolperson may provide patrol on this and adjacent projects. No patrolperson shall be required on Specified Road construction jobs except during clearing operations unless otherwise specified.

The Contractor shall, prior to commencing work, furnish the following information relating to key personnel:

<u>Title</u>	<u>Name</u>	<u>Telephone Number</u>
Fire Supervisor		
Fire Patrolperson		

I. **Clearing of Fuels:** Contractor shall clear away, and keep clear, fuels and logging debris as follows:

Welding equipment and stationary log loaders, yarders and other equipment listed in California State Law:	10 feet slope radius
Tail or corner haulback blocks:	All running blocks shall be located in the center of an area cleared to mineral soil at least 15 feet in diameter.
Lines near, between or above blocks:	Sufficient clearing to prevent line from rubbing on snags, down logs and other dead woody material.

6. EMERGENCY PRECAUTIONS

Contractor's Operations shall conform to the limitations or requirements in the Project Activity Level (PAL) table below. Project Activity Levels applicable to this project shall be the predicted activity levels for the Fire Danger Rating Area(s), or fire weather station(s) stated in the Contract Area Map Legend on Integrated Resource Service Contracts (IRSC's), and other contracts where applicable.

Fire Danger Rating Area/Fire Weather Station for Project

Tahoe NF Westside PAL Group

The Forest Service, in its sole discretion, may change the predicted activity level if the current fire suppression situation, weather and vegetation conditions warrant an adjustment. If practicable, Forest Service will determine the following day's activity level by 6:00 PM. Contractor shall obtain the predicted Project Activity Level from the appropriate Ranger District Office before starting work each day.

Phone Number or Website to obtain Predicted Activity Levels:

530-478-6176

Forest Service may change the Project Activity Level Table to other values upon revision of the National Fire Danger Rating System. When Contractor is notified, the revised Project Activity Levels will supersede the levels in the Project Activity Level Table below.

PROJECT ACTIVITY LEVEL

Level	Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.
A	Minimum requirements noted above in Sections 4 and 5.
B	1. Tank truck, trailer, or approved CAFS substitute shall be on or adjacent to the Active Landing.

Level	Project Activity Minimum Requirements and Restrictions. Restrictions at each level are cumulative.
C	<ol style="list-style-type: none"> When Hot Saws or Masticators are operating, a tank truck, trailer, or approved CAFS substitute shall be within ¼ mile of these operations. Effective communications shall exist between the operator and the Active Landing. Immediately after Mechanical Operations cease, Fire patrol is required for two hours.
D	<ol style="list-style-type: none"> Immediately after Hot Saw or Masticator operations cease, Fire patrol is required for three hours. No Dead Tree felling after 1:00 PM, except recently dead. 2hr fire patrol regardless of shutdown time No burning, blasting, welding or cutting of metal after 1:00 PM, except by special permit.
Ev	<ol style="list-style-type: none"> The following activities may operate all day: <ol style="list-style-type: none"> Loading and hauling logs decked at approved landings. Loading and hauling chips stockpiled at approved landings. Servicing equipment at approved sites. Dust abatement, road maintenance (Chainsaw use prohibited), culvert installation within cleared area, chip sealing, paving, earth moving or rock aggregate stock pile loading and installation (does not include pit or quarry development). Chainsaw and log processing operations associated with loading logs or other forest products at approved landings. Hot Saws or Masticators may operate until 1:00 PM; provided that: <ol style="list-style-type: none"> A tractor with a blade or other equipment capable of constructing fireline is on or adjacent to the active landing or within ¼ mile of the operating equipment. This piece of equipment shall have effective communication with the Hot Saw or Masticator. Any additional restrictions specified by the Forest. All other conventional Mechanical Operations are permitted until 1:00 PM. 2hr fire patrol Some operations may be permitted after 1:00 PM, on a case-by-case basis, under the terms of a PAL Ev Variance Agreement. Activities for which a Variance may be issued are: terms of variance <ul style="list-style-type: none"> Rubber Tire Skidding Chipping on Landings Helicopter Yarding Fire Salvage <p>When approved by a Line Officer, a Variance Agreement can be implemented when the criteria specified in the agreement are met and mitigation measures are in place. This approval is good for ten (10) days unless cancelled sooner or extended by the Contracting Officer for an additional ten (10) days. Variance approval can be withdrawn at the sole discretion of the Forest Service. Variance approval is contingent on the 7-day fire weather forecast, fuel conditions, site characteristics, current fire situation, state of Contractor’s equipment for prevention and suppression readiness, type of operation and social and community considerations etc. (See attached Project Activity Level Variance Agreement).</p>
E	<p>The following activities may operate all day:</p> <ol style="list-style-type: none"> Loading and hauling logs decked at approved landings. Loading and hauling chips stockpiled at approved landings. Servicing Equipment at approved sites. Dust abatement, road maintenance (chainsaw use prohibited) or loading stock piles and rock aggregate installation (does not include pit or quarry development). Chainsaw operation associated with loading at approved landings. <p>All other activities are prohibited.</p>

This Project utilizes “The Project Activity Level” (PAL), an industrial operation’s fire precaution system. The following Climatology Chart indicates the Historic Activity Levels

for the Project Fire Danger Rating Area or Fire Weather Station utilized on this Project. This is only a historical average of the Activity Levels for the identified Fire Danger Rating Area or Weather Station.

Project Activity Level Climatology								
Station/SIG/Unit:	TNF Eastside Group				Years Analyzed	1979 - 2008		
	A	B	C	D	Ev	E	Days	
Month	Expected Days per Month at each PAL Value						Analyzed	
May	5.6	8.4	11.8	3.9	1.4	0.0	683	31
June	4.1	7.3	12.9	4.3	1.6	0.0	881	30
July	0.7	2.7	13.4	8.1	5.8	0.2	896	31
August	0.7	1.9	10.1	8.9	8.3	1.2	902	31
September	2.0	3.0	11.6	7.1	5.6	0.5	866	30
October	4.7	6.6	12.6	5.1	2.0	0.0	775	31
November	10.3	9.8	9.0	0.8	0.1	0.0	607	30
	28.0	39.6	81.4	38.2	24.8	1.9	5610	
	A	B	C	D	Ev	E	Days	
Month	Percent of Days per Month at each PAL Value						Analyzed	
May	18.0	27.1	37.9	12.4	4.5	0.0	683	100
June	13.5	24.2	42.9	14.2	5.2	0.0	881	100
July	2.1	8.7	43.3	26.2	18.9	0.8	896	100
August	2.2	6.0	32.5	28.6	26.8	3.9	902	100
September	6.8	10.2	38.8	23.8	18.8	1.6	866	100
October	15.1	21.3	40.8	16.5	6.3	0.0	775	100
November	34.4	32.6	30.0	2.6	0.3	0.0	607	100
							5610	

Region 5 Project Activity Level (PAL) Ev Variance Application/Agreement

Project Name: _____
 Contract Number: _____
 Contractor Name: _____
 Request #__, for period: _____
 Units/Subdivisions Affected: _____

Location of operation:	
Slope	
Aspect	
Elevation	
Fuels on site	
Fuels in surrounding area	
7 Day PAL Outlook	
Short range predictions (Red Flags)	
Fuel Moistures	
Response time of suppression resources	
Potential for ignition	
RAWS location	
Current Fire Situation:	
Draw down information	
National Readiness Level	
Contractual considerations:	
Normal Operating Season	
Frequency of recent contract fires in area	
Type of operation	
Contractors past/current performance & equipment readiness	
Other site specific mitigation or precaution (i.e. Contractors proposals)	
Social & Community Considerations:	
Proximity of high value resources	
Sensitivity of location	

Proposed Actions:

Description of Mitigation Measures:

Remarks:

Fire Management Officer Concurrence

Date

Line Officer Approval

Date

I have considered the above request and determined the specified mitigation measures or actions must be implemented to continue operations in Project Activity Level Ev. Unless extended, the approval remains in effect for ten (10) calendar days unless cancelled sooner or extended by the Forest Service for an additional ten (10) days. At the sole discretion of the Forest Service, this variance can be modified and/or cancelled at no cost to the government.

Contracting Officer

Date

Contractor Representative

Date