National Forest Foundation

Building 27, Suite 3, Fort Missoula Road
Missoula, Montana 59804
TEL 406.542.2805
nationalforests.org

Project Prospectus

Russel Valley Fuels Reduction Project

Truckee Ranger District – Tahoe National Forest, California

Introduction

This prospectus is to provide potential bidders with **preliminary** and general project information related to mechanical fuels reduction treatments planned for the Russel Valley Fuels Reduction Project on the Truckee Ranger District of the Tahoe National Forest.

This prospectus also identifies a day and time of a project field tour. Staff from the National Forest Foundation and US Forest Service will be available to answer questions about the project. **Interested parties are encouraged to attend this tour** and further investigate the project before the official Request for Proposals advertisement in winter 2027 (this bidding period is estimated, and the opening date for an official bidding period is not yet determined). The field tour will provide a guided introduction to the area and help potential bidders better understand ground conditions before the official bidding period opens.

Field Tour

Meeting day/time: Friday, November 20, 2026, at 10:00am.

Meeting location: Junction of Dog Valley Rd and Old Reno Rd, 39°23'51.8"N 120°08'56.2"W

Google Map Location: Parking Area

Project Location

The project is located on the Truckee River Ranger District of the Tahoe National Forest. The general location of the Russel Valley Fuels Reduction Project is northeast of the town of Truckee, CA and just northwest of Boca Reservoir.

Project Details

The Russel Valley Fuels Reduction Project consists of approximately 936 acres of mastication and 180 acres of hand thin and treat. Please see the attached draft version of Appendix E – Russel Valley Service Work Specifications for more details.

All work on this project must be completed by September 30, 2027.

Project Specs

Please see the attached draft Appendix E – Russel Valley Service Work Specifications for general project work specifications. Appendix E and all project specifications are subject

to change prior to the Request for Proposals.

Bidding Process and Award Timeline
The opening date of an official bidding period is not yet determined. The National Forest Foundation estimates the bid for this project will open in winter 2027.

Project Operation Period
This project must begin as soon as conditions allow during the spring of 2027. The project must be completed by September 30, 2027.

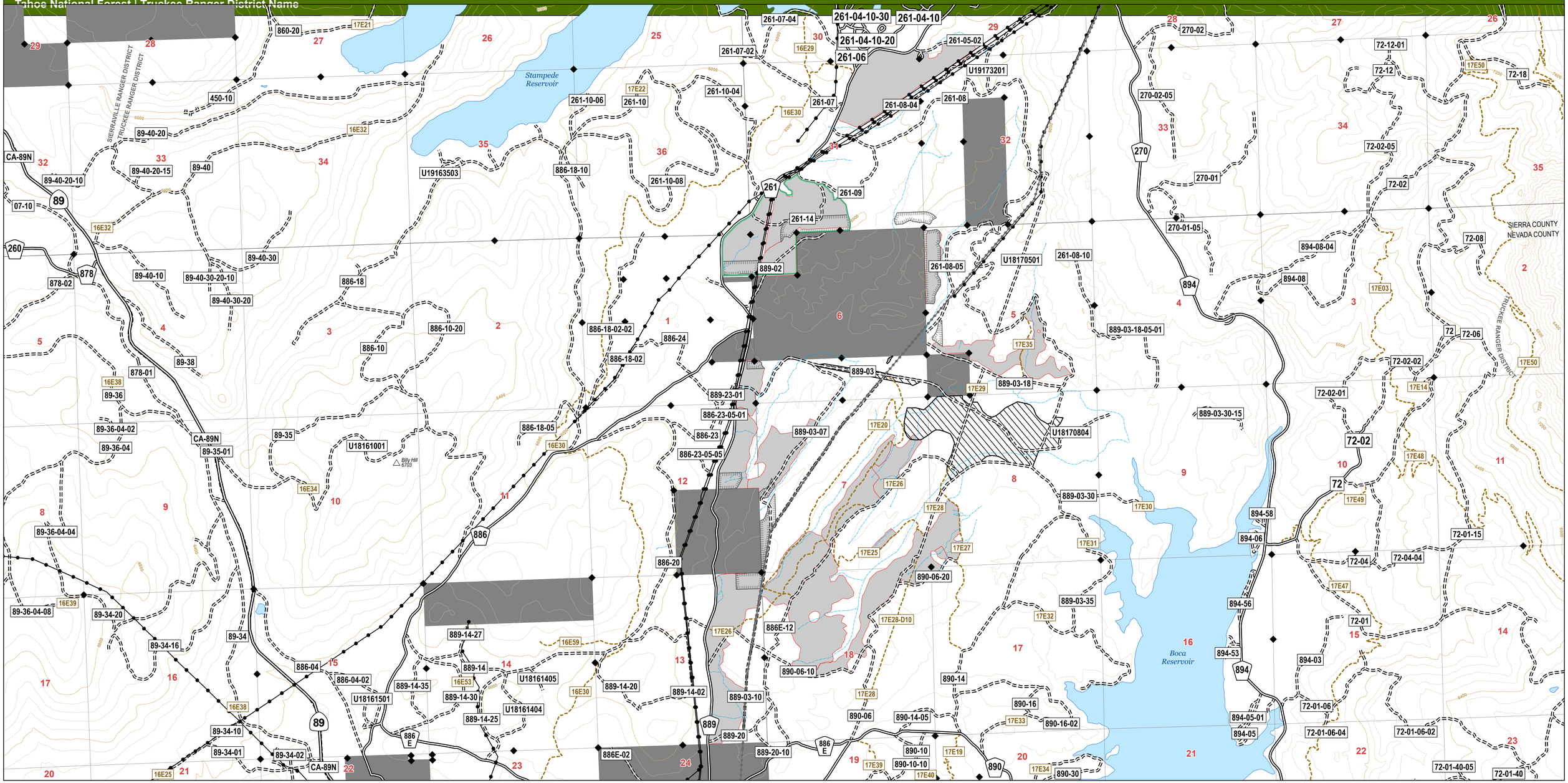
Important Note
This prospectus is not a legally binding document but is offered to provide preliminary project information. All data and information in this prospectus are preliminary estimates and subject to change. Interested parties are urged to examine and inspect all units within this project to ensure their own estimates.

Contact for Questions
Mitch Aikin
Central Sierra Project Coordinator
National Forest Foundation
Mobile: 775.498.0212
Email: maikin@nationalforests.org

USDA Forest Service
U.S. DEPARTMENT OF AGRICULTURE

Russel Valley Fuels Project

Tahoe National Forest | Truckee Ranger District Name



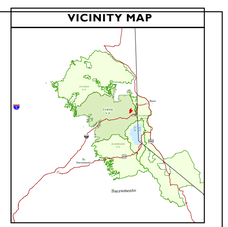
Other Ownership

Treatment
- Mastication
- Ephemeral Streamcourse, 25 ft. Equipment Buffer
- Survey Monument to Protect
- Pipeline (Petroleum)
- Powerline
- NF Trail to Protect
- Botany Protection
- Limited Operating Period, American Goshawk, 02/15 - 09/15
- Quiet Hours 1900-0600
- State Highway
- Existing Transportation - Improved Road
- Existing Transporatation - Unimproved Road

N

0 0.5 1
Miles

VICINITY MAP



Note: The USDA Forest Service, Tahoe N.F. uses the most current and complete data available. GIS data and product accuracy may vary. The lines and areas represented on this map are only approximate and their actual location on the ground may vary. This information may be updated, corrected, or otherwise modified without notification.

Map produced by Tahoe NF staff 11/12/2026

Projection and grid ticks: NAD83 UTM Zone 10N

Document Path: T:\FS\NFS\Tahoe\Project\Truckee\RusselValley2023\GIS\Planning\Workspace\Timber_Silviculture\Dwight\RV_Fuels_Contract\RV_Fuels_Contract\RV_Fuels_Contract.aprx

APPENDIX E
SCHEDULE OF ITEMS
AND
SPECIFICATIONS

Schedule of Items

SCHEDULE OF ITEMS: Russel Valley Fuels Reduction

Item Number	Description	Unit of Measure	Quantity	Unit Price $	Total $
1	Mastication	Acre	936.45		
2	Hand Thin & Treat	Acre	180.17		
Total	Mandatory Items				

SPECIFICATIONS

Item 1: Mastication

Mastication will occur in mastication only units as identified on the Contract Area Map. Mastication work will occur using standard mastication machinery such as a boom or drum masticator. Masticated material would include surface and ladder fuels including woody shrubs and conifers less than 10 inches DBH for live trees, and 12 inches DBH for snags.

Description of work:

1.1 Masticated Trees/ Shrubs: All live conifer trees less than 10 inches DBH (up to 12 inches for snags) shall be cut or retained to meet spacing requirements outlined below. Masticated trees shall be masticated to a stump height of 12 inches tall (as measured from the uphill side) and no residual live limbs are attached to the stump. Residual trees are un-damaged by contractor's operations, except for minor bark scraping which does not expose the cambium. All snags less than 12 inches DBH will be masticated. Brush shall be masticated to a height of 6 inches from the ground or 12 inches from obstacles (rocks etc.). Only masticate bitterbrush if it is within the drip line of a leave tree.

1.2 Masticated Material: Masticated material shall be no larger than 24 inches in length and 4 inches in diameter. Depth of masticated material shall not exceed 9 inches and should average no more than 4 inches across the unit as a whole.

1.3 Residual Tree Spacing: Following mastication there should be on average a spacing of 30 feet between boles of leave trees. Distances between trees may vary from 25 – 35 feet, and residual trees should not have interlocking crowns or exist within the dripline of other residual trees. Residual trees should generally cover the entire acre but are not arranged in a grid-like

fashion**.** Seedlings and saplings shorter than breast height should not be considered in spacing criteria. Residual trees are measured from tree bole to tree bole. All live trees other than trees less than breast height are considered in spacing requirements, regardless of size. If spacing cannot be met through no fault of the contractor such as steep slopes, rocky conditions or residual tree(s) with a larger DBH than the size class limits, the plot will be recorded as a null plot and not included in unit-wide calculations. Additional plots will be added to make up for any null plots recorded within a unit to meet the required the minimum 10 plots per unit and 1 plot every 10 acres.

1.4 Residual Tree Selection: No sugar pines should be cut. Residual trees should be vigorous, dark green and not chlorotic, with greater than 40% live crown ratio. Trees should have good form with minimal defect and free of obvious pest and pathogens (mistletoe etc.).
Tree species retention preference:

1 Sugar pine
2 Western white pine
3 Jeffrey/ ponderosa pine
4 Incense Cedar
5 Red fir
6 White fir
7 Lodgepole pine

1.5 Brush Mastication: Masticate all brush within the unit, except for bitterbrush that is outside of the dripline of leave trees.

1.6 Other Surface Fuels: Masticate all downed woody material that is greater than 3 inches in diameter and four feet in length and less than 12 inches diameter at the large end. Dead material that is within 6 inches of the ground does not need treatment.

Item 2: Hand Thin and Treat

****Hand thinned material or coarse woody debris may be treated using a variety of methods, including but not limited to removal from boundary, chipping, lopping and scattering, or hand pile construction. Full Request for Proposals will include finalized approach and associated specifications.****

2.1 Cut live trees: Live and dead conifers less than 12 inches DBH shall be cut so as to meet retention spacing requirements outlined below, within Item 2. Stump heights shall be less than 8 inches (as measured from the uphill side) with no residual live limbs attached to the stump. All snags less than 12 inches DBH will be cut and chipped. Coarse woody debris present on the forest floor will be piled, up to a 12-inch diameter maximum size. Dead and down bole wood greater than 12 inches in diameter will be limbed with associated limbs chipped and boles left.

2.2 Cut live shrubs: All brush species greater than 6 inches tall shall be cut to a maximum 6 inch

staub height and included in hand piles. Only hand thin bitterbrush (*Artemesia tridentata*) that is within the drip line of a leave tree.

2.3 Residual Tree Spacing: Following thinning there should be an average spacing of 30 feet between tree boles. Distances between trees should vary from 25 – 35 feet, and residual trees should not have interlocking crowns or exist within the dripline of other residual trees. Residual trees should generally cover the entire acre but are not arranged in a grid-like fashion**.** Seedlings and saplings shorter than breast height should not be considered in spacing criteria. Residual trees are measured from tree bole to tree bole. All live trees other than trees less than breast height are considered in spacing requirements, regardless of size. If spacing cannot be met through no fault of the contractor such as steep slopes, rocky conditions or residual tree(s) with a larger DBH than the size class limits, the plot will be recorded as a null plot and not included in unit-wide calculations. Additional plots will be added to make up for any null plots recorded within a unit to meet the required the minimum 10 plots per unit and 1 plot every 10 acres.

2.4 Residual Tree Selection: No sugar pines should be cut. Residual trees should be the most vigorous, dark green and not chlorotic, with greater than 40% live crown ratio. Residual trees should have good form with minimal defect and free of obvious pest and pathogens (mistletoe etc.).
Tree species retention preference:

1. Sugar pine
2. Western white pine
3. Jeffrey/ ponderosa pine
4. Incense Cedar
5. Red fir
6. White fir

2.5 Chipping Requirements: All material equal to or less than 12 inches diameter will be chipped; see 2.1-2.2 above. Chip depth shall not exceed 9 inches and should average no more than 4 inches across the unit. Chipped material shall be broadcast and directed away from any road, highway, system trail or drainage feature. No chips shall be present on roadbeds or in drainage features.

2.6 Pile Construction and Location: Hand piles shall be built dense, in a dome shape and to a minimum size of 6’ tall and 6’ in diameter. Material likely to roll downhill shall be placed perpendicular to the contour of the slope. During the pile construction process a sawyer will repeatedly make top down cuts through the entirety of the pile. This “dicing” or “bucking” of the pile severs the long connecting material and causes the pile to collapse into itself. Restacking the pile is almost always necessary after these cuts. This practice eliminates loose, airy, likely to topple, poorly made piles. Piles shall be placed outside of the dripline of residual trees with crown base heights less than 20 feet to avoid tree mortality. Piles should be located no less than 25ft from unit boundaries and waterbodies, 100ft from 100yr floodplains. Piles shall be set back a minimum of 50 feet from trails, roads, and powerlines. Piles will be covered with a minimum 4’x 4’ square of clean burn slash pile paper, located in the upper third of the pile with sufficient material placed on top to prevent movement under windy conditions. Due to sensitive resources,

pile locations may be restricted resulting in material being carried or dragged up to 200 feet to be placed in a pile.

Management Requirements

The following management requirements are anticipated to be used during project implementation. These management requirements are not all inclusive and additional measures may be developed as the proposed project moves forward in the environmental process. In addition, the proposed project would comply with all applicable standards and guidelines outlined in the *Tahoe National Forest Land and Resource Management Plan* (USDA Forest Service, 1990) and *Sierra Nevada Forest Plan Amendment Record of Decision* (USDA Forest Service, 2004)

BOTANY

Botanical Resources 1 – Threatened and endangered botanical species, Forest Service Sensitive botanical species occurrences, and Tahoe National Forest watch list occurrences will be identified on project maps to be provided to contractors. Occurrences will be flagged for avoidance. Consult with qualified District Botanist prior to implementation for site- and species-specific recommendations.

a) Mastication, slash or fuels piling, log decking or staging of equipment or personnel will not occur in TES occurrences.
b) TES botanical species occurrences will be avoided for all ground disturbing mechanical project activities. Avoidance buffers of *up to* 100 feet may be recommended by a qualified biologist depending on site- and species-specific conditions.
c) Avoid fire line and direct ignitions in TES occurrences and allow fire to creep/back into occurrences from adjacent terrain if fuel loading permits.
d) Use hand thinning treatments within occurrences that have been identified as having excessive fuel loading and are at risk for high severity fire. Avoid scattering slash and building piles on plants.

Botanical Resources 2 – Fens

a) Unverified fen locations in or adjacent to units 190, 240, 290, 320, 950, and 960 will have fen assessments and delineations completed prior to unit layout.
b) Fens will be flagged in the field with a 300ft buffer of the delineated fen.
c) Conventional mechanical equipment is not allowed within 300ft of the boundary of the fen (Equipment exclusion zone). Low ground disturbing equipment (i.e. wheeled equipment, yarders, spider masticator) is allowed within the 10ft to 300ft buffer fen for the purposes of restoration actions. All equipment is permitted on the roads within the 300ft buffer of the fens.
d) Hand work is permitted within the equipment exclusion zone and within the delineated fen area. Workers must spread out when walking through the fen. Material must be carried out of the fen and not dragged. If material cannot be completely carried out of the fen it will be left in place.

Botanical Resources 3 – Any previously undetected federally listed botanical species, Forest Service sensitive botanical species, or Tahoe National Forest watch list botanical species or botanical community

discovered prior to or during implementation will be flagged and avoided until it can be assessed for impacts.

Botanical Resources 4 – Surveys for TESW will be completed in un-surveyed areas with suitable habitat and where ground disturbance is proposed. Change in conditions after 5 years will be evaluated for prior survey coverage adequacy. Prior to project implementation, surveys will be conducted by a qualified natural resources specialist in the season when target species are identifiable. Survey documentation and GIS data will be recorded.

INVASIVE PLANTS

Invasive Plant 1 – Surveys for invasive plants will be completed in un-surveyed areas where ground disturbance is proposed. Change in conditions after 5 years will be evaluated for prior survey coverage adequacy. Survey documentation and GIS data will be recorded.

Invasive Plant 2 – All known, untreated, and newly discovered invasive plant infestations will be flagged for avoidance prior to implementation and/or included on project maps. New infestations will be reported.

Invasive Plant 3 – All equipment and vehicles (Forest Service and contracted) operating off-road will be free of invasive plant material before moving into the project area. Equipment and vehicles utilized in infested areas (e.g., spotted knapweed infested roadbed) will be cleaned before traveling to other National Forest lands. 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.

Invasive Plant 4 – All gravel, aggregate, fill, mulch, topsoil, erosion control materials, and other construction materials will be weed-free. When possible, onsite materials (e.g., rock, topsoil, or organic matter) will be used unless contaminated with invasive species. Materials will be obtained from sources that have been certified as weed-free.

Invasive Plant 5 – Seed and plant mixes would be approved by the District Botanist or the designated appointee who has knowledge of local flora. Invasive species and persistent nonnative species would not be used in revegetation. If feasible, native plant and seed material would be collected from as close to the project area as possible, preferably from within the same watershed and at a similar elevation.

Invasive Plant 6 – For areas involving ground disturbance caused by mechanical equipment or use of imported materials, notify the District Botanist or the designated appointee after the project is completed, so that the project area can be monitored for invasive plants after project implementation (as funding allows).

RANGE

Range 1 – Damage to rangeland infrastructure (e.g., fences, water developments, cattle-guards) during project implementation will be avoided. Any accidental damage to serviceable or intact infrastructure will be repaired to Forest Service standards.

Range 2 – Coordinate with permittees when scheduling implementation activities.

HERITAGE

Cultural Resources 1 - To ensure no adverse effects to cultural resources, management requirements are based on standard protection measures (SPMs) as outlined in Appendix E of *Amendment 4 to the Programmatic Agreement among the U.S.D.A. Forest Service, Pacific Southwest Region (Region 5), the California State Historic Preservation Officer, the Nevada State Historic Preservation Officer, and the Advisory Council on Historic Preservation Regarding Processes for Compliance with Section 106 of the National Historic Preservation Act for Management of Historic Properties by the National Forest of the Pacific Southwest Region* (Region 5 PA 2018, as amended January 2025). Project managers will coordinate with the district archaeologist if additional direction and field reviews are needed.

Cultural Resources 2 - Equipment is prohibited from operating within sites. Limited equipment-based work may be allowed within specific areas of sites (i.e., existing roads, landings or other disturbed areas) after review and written district archaeologist approval (i.e., large mining sites).

Cultural Resources 3 - Sites will be delineated on the ground with flagging and a minimum 10-meter buffer. Other site types, such as bedrock milling stations, may require additional buffers as determined by the district archaeologist. Flagging color will be defined in the contract, stewardship agreement, or between the project manager and the district archaeologist. Specific exclusion area maps will only be provided after a confidentiality agreement has been signed by the project lead and heritage program manager.

Cultural Resources 4 - No tracked equipment, except snowmobiles, shall be operated off of existing NFS routes within cultural resource site boundaries. Snowmobiles may be operated off of existing NFS routes within cultural resource site boundaries only when there is at least 12 inches of snow depth or enough snow cover to prevent resource damage.

Cultural Resources 5 - Cultural resource sites shall not be used as staging areas or for parking vehicles and equipment and will not be used for contractor camping areas.

Cultural Resources 6 - Sale administrator, project manager, district archaeologist will participate in the pre-work meeting where flagging and exclusion areas will be highlighted and discussed.

Cultural Resources 7 - If new cultural resources are discovered during project implementation, cease operations immediately and notify district archaeologist immediately. Work can resume after review and protection measures are agreed upon in writing by the district archaeologist. Local Tribal representatives will be notified if new precontact cultural resources are discovered and offered the opportunity to review the discovery.

Cultural Resources 8 – Re-use existing breaches as crossings for linear sites (i.e., ditches, railroad grades). Construction of new breach locations require district archaeologist approval.

Cultural Resources 9 - Directionally fell trees parallel to or away from linear sites.

Cultural Resources 10 - Isolated trees inside of linear sites may be felled on a case-by-case basis with district archaeologist approval.

Cultural Resources 11 - Hand cutting of vegetation less than 10 inches in diameter (DBH) is permissible within site boundaries. Hand piles may be constructed and burned within site boundaries with district archaeologist review and approval.

Cultural Resources 12 - Removal of trees greater than 10 inches DBH within sites requires district archaeologist approval. Limited operations include hand bucking, rubber tire equipment, crane self-loaders, helicopters, and equipment such as feller bunchers that may be able to reach inside the flag line to remove vegetation. Additional non-ground disturbing operations may be approved after district archaeologist review.

Cultural Resources 13 - Prescribed fire may be conducted within sites only in areas designated by District Archaeologist. It may be necessary to hand remove fuels, including duff, from the vicinity of sensitive cultural features within a site prior to burning (i.e., bedrock milling station).

Cultural Resources 14 - Fire control lines must be outside of site perimeters. If control lines are needed within site perimeters, these areas must be designated and approved by the district archaeologist. Control lines within site boundaries must be constructed by hand; use of equipment requires district archaeologist review and approval.

Cultural Resources 15 - Additional surveys may be required for fire lines, landings, staging areas, contractor campsites, etc. that are outside of planned treatment units. The project manager will review these locations with the district archaeologist prior to project manager approval.

Cultural Resources 16 - Full suspension is required over sites during cable logging operations.

FUELS

Refer to Russell Valley – Appendix B: Management Requirements for Fuels Specific Treatments

HYDROLOGY

Hydrology 1 – Establish Riparian Conservation Areas (RCAs) for all stream courses, as specified below. Ensure Riparian Conservation Objectives (RCOs) are met within RCAs. Contract maps will be reviewed prior to bid to ensure sensitive areas are adequately represented. RCA widths are as follows, unless widths as determined by a Regional Water Quality Control Board (RWQCB) are wider, then those take precedent.

Stream Type	**Width of the Riparian Conservation Area (RCA)**
Perennial Stream	300 feet each side, measured from riparian vegetation edge
Seasonal Flowing Streams	150 feet each side, measured from riparian vegetation edge
Streams in Inner Gorge	Top of inner gorge
Meadows, fens, lakes, and springs	300 feet from edge of feature or riparian vegetation, whichever is greater

Hydrology 2 – RCAs will be identified on project maps and may be identified in the field when necessary. These will be between 25 feet and 150 feet from either side of the stream channel depending on stream type and slope, as required by RWQCB. **RCAs are not mechanical exclusion zones.**

Hydrology 3 – Within RCA, operation of ground disturbing equipment should be limited to slopes less than 25% unless approved by Hydrologist, Soil Scientist, or Aquatics Biologist.

Hydrology 4 – Within the RCA, main skid trails should be placed 65 feet from the riparian feature when running parallel to a sensitive feature, drainage, or meadow. When not feasible, skid trail placement should be approved prior to implementation by a Botanist/Hydrologist/Soils Specialist.

Hydrology 5 – Within the RCA, all bare ground resulting from equipment operations will be mulched to a coverage of 85%.

Hydrology 6 – Within RCAs, ground disturbing activities should not exceed Soil Disturbance Class 1 (e.g., faint wheel tracks, forest floor intact, no signs of displacement or increased compaction) according to the Soil Disturbance Field Guide (USDA Forest Service, 2009).

Hydrology 7– No new landings or roads will be located within RCAs. Consult with hydrologist, soil scientist, and/or aquatic biologist before using an existing skid trail, landing, or road located within an RCA.

Hydrology 8 – When equipment is operating inside RCAs near a hydrologic feature, minimize ground disturbance with short perpendicular entries into the RCA.

Hydrology 9 – Within the RCA, allow for adequate large wood recruitment into stream systems, where appropriately determined by a hydrologist or biologist.

Hydrology 10 - Sensitive areas will be delineated as GIS polygons and include riparian complexes containing floodplains, hydric soils, and wet vegetative features (including fens and springs).

a) Within the polygons, remove conifers as annual soil moisture content allows. Access routes and areas to be incorporated will consider soil capability and soil moisture. In locations where drainages merge into the floodplain, they are considered within the floodplain and sensitive areas.
b) Each polygon area will require boundary delineations identifying accessible equipment boundaries (EKO). Signage can be used to delineate areas of "controlled access" where dissected drainages or complex hydrologic features exist.
c) Aquatic defined biological boundary requirements that exceed the RCA delineations take precedence over hydrologic boundaries.
d) Fuels treatment of heavy downed fuels within sensitive sites can occur, with a preference for hand treatment, unless otherwise determined by Hydrologist/Aquatics Biologist/Botanist. Sufficient down woody debris should remain to retain recruitment.

Hydrology 11 - Equipment will generally avoid seasonally wet areas except where annual site conditions may allow as determined by a Hydrologist/Botanist/Aquatic Biologist. Equipment arms, long lining, suspension systems, or manual access will be allowed to reach into these locations to meet site objectives.

Hydrology 12 - Mechanical equipment may enter RCAs, with approval or as delineated by unit, but not within a minimum of 25 feet of the edge of a channel, meadow, sensitive area, or other special aquatic feature, unless approved by a Forest Service watershed specialist and aquatic biologist. Other natural resource equipment exclusion widths may take precedent.

Hydrology 13 - No crossing of perennial streams by mechanical equipment is allowed. Crossings of intermittent and ephemeral channels would be designated by a qualified specialist prior to implementation. Following use of these crossings, a Hydrologist or Aquatic Biologist would assess the site for potential restoration as needed.

Hydrology 14 - Temporary stream crossings for skid trails need to be designated on contract

maps. Crossings will use materials (brush mats/logs) to prevent discharge of earthen materials where necessary. Crossing materials will be removed as soon as possible following the treatment, by October 15th of the same year.

Hydrology 15 - Utilize existing landings and skid trails where possible. Locate skid trails at least 75 feet apart, except where they converge near a landing.

Hydrology 16 - Fire Line Construction.

a) Construct mechanical fire line outside of RCAs to extent practicable. Avoid constructing mechanical fire line within 100 feet of perennial and intermittent streams. Avoid constructing fire line directly parallel to stream channels.
b) Hand line within RCAs is preferrable to minimize potential for erosion, particularly where burn implementation may not be immediate.
c) Ensure water bars and lead outs are applied on fire line to reduce erosion processes at regular intervals according to slope.
d) Pull back berms to maintain overland flow in low slope areas.
e) Provide ground cover as needed.
f) Camouflage entry where unauthorized OHV access appears likely.

Hydrology 17 - No direct ignition for under-burns will occur within 25 feet of a perennial and intermittent waterbody and wet features, unless otherwise agreed to by a hydrologist, soil scientist, and/or aquatic biologist. Fire may back into the RCAs.

Hydrology 18 - Burn Piles should be located 25 feet from waterbodies, 100 feet from 100 year floodplains, and should not exceed 25 feet in diameter in an RCA.

SOILS

Soils 1 – Ground-based mechanical equipment would be restricted to less than 30 percent slope unless the following precautions are taken between 30 to 50 percent slope:

a) On slopes up to 35%, low pressure (Ie high flotation and/or dual tire) equipment may be used. On slopes up to 40 percent, tracked equipment can be used. On slopes up to 50 percent, tethered equipment can be used.
b) Rutting during operations should not exceed 6 inches depth
c) Non-tethered uphill or adverse skidding is restricted to less than 30%.
d) Additional precautions or repairs may be required if excessive disturbance occurs.
e) Forest Service may approve steeper pitches less than 100 feet.

Soils 2 – Equipment will minimize turning which results in ground disturbance (rutting). Do not unnecessarily track through non-target vegetation zones.

Soils 3 - No equipment should operate over sensitive soils. These soils will be delineated within the sensitive area polygons.

Soils 4 - Do not track up and down drainage pathways and minimize equipment movement through swales.

Soils 5 – De-compact landings, skid trails within 200 feet of landings, and temporary roads, as determined necessary, after timber activities are completed. De-compact soils vertically to a maximum depth of 24 inches to alleviate detrimental compaction. De-compact soils on the contour to break up any continuous furrows that follow the fall line.

Soils 6 - De-compaction will be completed 8 feet from the bole of larger trees so as not to impact root systems.

Soils 7 – Mechanical equipment may only operate when soil moisture is less than 20 percent by weight. Forest Service standard contract provision Erosion Prevention and Control will be used to suspend operations due to wet weather, high water, and other adverse operating conditions. Use the ball method to test for soil operability. Outside normal operating season (NOS) or during wet periods within the NOS, operations may only occur under a signed Tahoe National Forest Wet Weather Operations Guidelines.

Soils 8 –Water bars will be constructed to Forest Service standard on all high traffic areas including skid trails, temp roads, and fire line per Forest Service guidance. Out-sloping or placement of soil cover may be done in lieu of water barring. Disturbance with potential for erosion, rilling, or gullying will be repaired to Forest Service standard.

Soils 9 – Erosion control must be completed prior to October 15th or before any significant storm event forecasted by the National Weather Service to produce more than 0.5 inches of precipitation in 24 hours. After October 15th erosion control must be kept current with ongoing operations.

Soils 10 – Cable logging corridors will be hand water-barred. Additional mulching maybe directed by natural resource specialist.

Soils 11 - Decommission all temporary roads. Temporary roads will be decommissioned according to Renewable Resources Planning Act (16 USC 1608): appropriately draining the road to establish a hydrologically neutral state, pulling berms, spreading excess mineral soil, obliterating road entries, and re-establishing the natural contour in necessary areas. Particular attention will be paid to roads within the RCAs and drainages.

Soils 12 - Maintain at least 50% effective soil cover on slopes less than 35% (post activity) and at least 60% soil cover on slopes greater than 35% (Forest Plan S&G 55). To meet ground cover and erosion control requirements, mulch will be applied. Native materials (pine needles, woodchips, slash) from adjacent areas or certified weed-free mulch should be used.

Soils 13 – Back-blade / repair equipment-created berms greater than 3-inches that could concentrate water and deliver sediment within flatter ground-based harvest areas.

RECREATION

Recreation 1 – Limit the number of locations where mechanical equipment operations intersect with existing trail networks. Crossings will be intermittent, as few as possible while meeting project treatment objectives and made at a 90-degree angle to the trail. All ground disturbance will be rehabilitated once treatment activities are completed. When necessary, marred or damaged trail segments will be repaired and or re-constructed to current Forest Service standards.

Recreation 2 – Temporary routes, skid trails, and landings will be obliterated and adequately blocked off after operations are completed to prevent future, unauthorized recreational use.

Recreation 3 – Fireline construction for prescribed burning will take place as close as possible to when burning is scheduled.

Recreation 4 – Disguise intersections of constructed fireline with existing system routes (all roads and or trails) by covering with duff and or down woody material for 50 feet from intersections until burning is scheduled to take place to prevent development of new unauthorized trails.

Recreation 5 – Where visible from designated roads and trails, constructed firelines for prescribed burning should be rehabilitated as soon as possible after prescribed fire is applied to prevent development of new unauthorized trails. Rehabilitation actions include kicking, shoveling, or raking dirt and duff back over the disturbed area. Where feasible, cover cut stumps with dirt and duff.

Recreation 6 – Protect all improvements including trails, roads, campground facilities, water system features, signs, barriers, or bridges etc. If any barriers (including boulders) or improvements are removed to facilitate activities, they must be re-installed in the same location and manner immediately following vegetation management operations. If any improvements are damaged or removed by project activities, they must be replaced in-kind and reinstalled in the same location and manner, to meet Forest Service Standards.

Recreation 7 – Flag and protect all buried waterlines identified by the Forest Service. Heavy equipment would not drive over buried waterlines unless on paved surfaces. The only exception would be if a temporary crossing is built to protect the ground surface.

Recreation 8 – Whenever possible, keep all roads, trails trailheads, dispersed and developed recreation sites open for public use. Establish detours where needed and feasible, and issue Forest Closure Order for roads, trails, and other recreation sites if necessary to protect public safety.

Recreation 9 – Develop an implementation plan in consultation with District Public Services Officer to schedule project activities to minimize disruption of recreation facility use by the public. The plan would include limited operating periods, including holidays and peak season weekends, and potential temporary site closures.

Recreation 10 – Provide for public safety and education by posting notices to inform public of project activities (i.e., thinning, burning). Posted notices should be at, but not limited to, trailheads, campgrounds and the District Office. Notices would be posted on TNF website at least two weeks prior to treatments. Keep information current. Campground closures would require a six month notice for reservable campgrounds and will be avoided whenever possible.

Recreation 11 – Limited operating periods shall be designated for operations along roads and trails that may impact annual recreational events.

Recreation 12 – Forest roads and trails would be signed for safety during implementation, Control perimeters will be signed and flaggers on site as necessary for public safety. Road and trail signage will meet Manual on Uniform Traffic Control Devices (MUTCD) standards. Additional signage may be necessary in high use recreation and special use permitted areas.

Recreation 13 – Locate new landings away from developed and dispersed recreation areas and special use permitted sites (cabins, campgrounds, day use sites etc.) where feasible.

Recreation 14 – Recreation facilities shall not be used by contractors or project personnel for camping, parking, staging, trash disposal, or restrooms other than as necessary for recreation site treatments unless agreed in advance by a Forest Service authorized officer (i.e., District Ranger).

Recreation 15 – If system trails must be used as holding lines or for other activities, district trails manager will be involved to determine the preparation and post treatment of those lines or other needs (for example, signage). Minimize widening, straightening, or changing the surface of the trail; retain character trees and vegetation that defines the trail tread. Trail width shall not permanently increase. Trails would be restored to pre-project condition following treatment.

SCENERY

Scenery 1 – When selecting burn pile locations, minimize visibility from private residences, recreation sites, trails, and nearby roads to reduce visual effects.

Scenery 2 – Wherever possible, piles shall be a minimum of 300 feet from all residential property boundaries and special use permitted sites. Piles located close to these areas, and within the immediate foreground or viewshed shall be prioritized for burning or any other pile eliminating treatment. When piles are necessary, utilize hand piles only within 50 feet of roads, and.

SILVICULTURE

Silviculture 1 – Burn piles will be placed at least 15 feet away from the base of residual trees. If pile burning results in mortality above Forest Plan standards, salvage of dead and dying trees may be conducted.

Silviculture 2 – Where feasible, chipping will occur away from large legacy trees and oaks.

Silviculture 3 – As site specific conditions and cost warrant, appropriate measures will be taken to reduce mortality of large (i.e., greater than 30 inches DBH) Jeffery/ponderosa pine and Western white/sugar pine during burning activities. This may be accomplished in multiple ways including, but not limited to, constructing fire lines at driplines, raking duff and bark away from trunks, or burning when duff is saturated. Large tree protection will be prioritized both inside and outside of PACs.

Silviculture 4 – Hardwoods greater than 4 inches DBH will not be removed except to allow for equipment operability or safety. Individual trees and pockets of smaller hardwoods may be flagged for avoidance during operations.

Silviculture 5 – Landing size will be limited to the smallest size necessary to accommodate logging operations and slash pile storage. Biomass accumulated on landings may be disposed of in a number of ways, including on-site burning, commercial and personal firewood, or as co-generation fuel if plausible.

Silviculture 6 – During thinning and prescribed burning, rust resistant Western white pine and sugar pine trees identified on the sale area map will be protected.

Silviculture 7 – Roadside hazard trees may be removed within thinning units in accordance with Forest Health Protection (Report # RO-22-01) and Hazard Tree Guidelines for Forest Service Facilities and Roads in the Pacific Southwest Region (USDA Forest Service, 2012). Hazard trees greater than 30 inches DBH may not be removed from the site if retention can improve wildlife habitat and is consistent with project fuels objectives.

Silviculture 8 – An EPA- registered borate compound would be applied to cut conifer stumps in accordance with region 5 FHP Report #RO-21-02.

WILDLIFE

Wildlife 1 – Limited Operating Periods (LOPs):

a) For American goshawk, an LOP from February 15-September 15 will be applied prohibiting vegetation management activities within approximately 0.25 mile of an active nest. If surveys confirm that goshawks are not nesting, the LOP may be waived. If the location of the nest stand is unknown, the LOP will be applied to a 0.25-mile area surrounding the PAC.
b) For bald eagles, an LOP from January 1-August 31 (or 30 days past fledging) will be applied prohibiting vegetation management activities within approximately 0.25 miles of an active nest.
c) For greater sandhill cranes, an LOP from April 1-August 1 will be applied prohibiting vegetation management activities within approximately 0.25 miles of an active nest.
d) For wolves, an LOP from April 1-July 15 will be applied prohibiting vegetation management activities within approximately 1 mile of an active den or rendezvous site. The LOP may be extended past July 15, if deemed necessary based on discussions with California Department of Fish and Wildlife and US Fish and Wildlife Service.
e) Individual LOPs may be modified spatially or waived upon recommendation by the district biologist.
f) If any previously unknown federally threatened, endangered, or candidate species, or Forest Service sensitive species, is determined to be nesting or denning within 0.25 miles of active vegetation management activities, appropriate mitigation measures (e.g., application of a species-specific LOP) may be implemented upon recommendation by the district biologist.

Wildlife 2 – Cover

a) Within select thinning, fuels reduction, and under-burn areas some debris piles will be evaluated for potential retention as wildlife cover habitat.
b) Hand piles would be placed in areas that minimize damage from burning to large conifers and hardwoods, snags, and large downed logs.

Wildlife 3 – Snags and Large Down Woody Debris

a) To encourage recruitment of snags and live trees with desirable wildlife characteristics (e.g., teakettle branches, stick nests, large diameter broken top, cavities, and woodpecker excavations), mid- and large diameter live trees exhibiting these characteristics may be retained within the limits of safety and operability.
b) Hazardous trees or snags greater than 24 inches DBH that are felled will be left to recruit large down woody debris up to levels identified as the desired condition for the area. Hollow trees, oaks, then pines in order of decreasing priority will be retained instead of removed or piled. Fallen trees/snags would not be bucked up into small pieces but will be retained as whole logs or large pieces, where feasible

c) To the extent feasible, existing large down woody debris will be retained during under-burning activities with a specific emphasis on retaining large down logs and logs with cavities.

Wildlife 4 – Consider additional marking guidelines to retain potential bat roost trees where there is evidence of bat activity or where habitat features exist which may attract bat roosting.

AQUATIC WILDLIFE

Aquatics 1 – Prior to ground disturbance, all construction personnel should be trained by Project biologist to recognize Sierra Nevada yellow-legged frog (SNYLF) and sensitive aquatic species with potential to occur within the Project area. Construction personnel will be made aware of measures to avoid potential impacts to SNYLF and what to do if SNYLF is encountered.

Aquatics 2 - If a federally listed aquatic species (SNYLF) is detected during construction, all work that has potential to adversely affect the species will be stopped and the Truckee Ranger District Biologist will contact the USFWS as soon as practicable to initiate ESA Section 7 consultation. Work that may affect the federally listed species will not be resumed until Section 7 consultation is completed. Only USFS biologists or USFWS permitted biologists may handle, capture, or move the listed amphibian.

Aquatics 3 - To minimize effects to SNYLF during and after Project implementation the following measures will be applied:

a. Tightly woven fiber netting, plastic mono-filament netting, or similar material shall not be used for erosion control or other purposes within suitable habitat (82 feet of perennial or intermittent water bodies).
b. Measures will be in place to protect stream flows and avoid disturbance and impact to the hydrology of wetlands and meadows. Access routes are designed to minimize impacts and will be restored following use. Design criteria will include measures to minimize the risk of activity related sediment from entering aquatic habitats. Areas disturbed in suitable habitat will be restored to preexisting conditions within one breeding season.
c. Prior to initiating ground disturbing activities or staging construction equipment, a Spill Prevention Control and Countermeasure Plan will be created to address protection measures related to the storage and use of fuels and other toxic materials.
d. All equipment (e.g., field gear, pumps) used in a water body during project implementation shall be inspected and free of invasive species prior to implementation.
e. Consult an aquatics biologist about any herbicide use, and do not allow the use of foam during prescribed burning activities within Riparian Conservation Areas (RCAs). An aquatics biologist will review areas within 500 feet of occupied sites of SNYLF to determine if application of boron or borate compound (trade name Sporax® or Cellu-Treat®) should be avoided.
f. Drafting sites shall be located to minimize sediment and maintain riparian resources, channel condition, and SNYLF habitat. Screening devices will be used for water drafting pumps, along with low entry velocity to minimize removal of aquatic species, including juvenile fish, amphibian egg masses and tadpoles, from aquatic habitats. Use suction strainers with screens less than 2 mm in size. Place draft suction strainer in a clean bucket with no cracks or holes to avoid substrate and amphibian disturbance. Place draft suction strainer in a bucket to avoid substrate and amphibian disturbance. Draft from deepest water source, near bottom. Where streams are the sole water source, drafting will be

allowed until stream flows reach 2 cfs. Below 2 cfs, drafting would only be allowed in previously developed off-site water impoundments as approved by the Forest Service.

g. Use of any drafting water source in the project area will be agreed to prior to use. To avoid impacts to SNYLF, prior to use each year, water drafting sites where frog habitat is present, a survey will be conducted by an aquatics biologist to determine if frogs are present.
h. SNYLF Limited Operating Periods (LOPs) if SNYLF are present:
    - *April 15 through August 15*: Prohibit habitat manipulation or other activity that could create bank disturbance within occupied habitats.
    - *November 30-May 30*: Within RCAs noted by the aquatics biologist as SNYLF habitat or breeding areas, no ground disturbing activities. This LOP is needed to avoid possible interference with SNYLF during a time when they may move between waterways to access breeding and overwintering habitats.

Aquatics 4 – All water drafting vehicles will be checked and repaired as necessary to prevent leaks of petroleum products from entering RCAs or water. Any petroleum spill into water will be immediately contained and reported to Forest Service dispatch. Operators of water drafting vehicles will have access to petroleum spill kits and training in effective spill kit deployment. Absorbent pads will be disposed of in accordance with a Hazardous Response Plan approved by the Forest Service.

Aquatics 5 – At water sources where overflow runoff from water trucks or storage tanks may enter a stream, effective erosion control devices shall be installed.

Aquatics 6 - Any conifers removed inside the riparian buffer should be directionally felled away from the stream channel to avoid direct crushing of amphibians.

Aquatics 7 – Contractor shall conduct project activities in a manner that prevents the introduction, transfer, and spread of aquatic, riparian, and terrestrial invasive species from one work site and/or water body to another. Prior to entering the project area, contractors shall inspect equipment for invasive species and, if any signs of invasive species are found, the equipment shall be cleaned to remove those species. All visible soil/mud, plant materials, and animal remnants on equipment will be removed prior to entering and exiting the work site and/or between each use in different water bodies. Contractors shall notify Tahoe NF staff immediately if an invasive species not previously known to occur within the worksite is discovered during work activities.

THREATENED AND ENDANGERED SPECIES

Threatened and Endangered Species 1 – If federally threatened or endangered species are detected within 300 feet of the implementation area prior to or during project activities, any activities in the sighting area that could result in adverse effects to the species will stop or not commence and Forest Service staff will be notified immediately. The Forest Service will take appropriate steps necessary and may contact the USFWS for additional guidance before work can resume in the area where the species was encountered. Federally listed species will not be handled or harassed during any activity related to the proposed action, and species will be allowed to leave the active work area on their own accord.

Specific Inspection Procedures

The contractor will be required to submit self-inspection forms to be reviewed and subsampled prior to payment or acceptance of work. Plot centers will be marked with flagging so that plot centers can be relocated for spot checking purposes. Government representatives and NFF may inspect all or none of the inspection plot locations to verify accuracy. Inspection forms must be submitted to government representatives in a timely manner and should allow up to 10 days for review prior to acceptance of work. Each plot center will include the plot number, unit number, date and inspector's initials written on the flagging. A plot inspection form will be used to record the findings and will be submitted to the government. Inspection forms will record the following information on each plot:

Performance measures for sub merchantable tree and shrub mastication

1. Number of trees remaining
2. Status of residual tree health (greater than 40% live crown, free of obvious signs of pests and pathogens)
3. Location of residual trees (no interlocking crowns or present within dripline of other trees)
4. No snags less than 12 inches DBH present
5. Height of stumps (<8 inches)
6. Presence of live target shrub species (green leaf manzanita, snowbrush, white thorn)
7. Height of stems of shrubs

Performance measures for surface fuels removal

1. presence of coarse woody debris within stipulated ranges (>4 feet in length and 3 inch diameter and < 12 inches diameter)

Performance measure for mastication

1. Size of masticated material (<24 inches length, 4 inch diameter)
2. Depth of chips < 9 inches on average

Performance measure for chipping

1. Chip depth
2. Location of chips (outside of drainages, adjacent to infrastructure etc.)

Performance measure for pile creation

1. Location of piles
2. Height of piles
3. Diameter of piles
4. Form of pile (conical)
5. Presence of proper sized covering in proper location

A series of $1/50^{th}$ acre plots (16.7 foot plot radius) per every 5 acres, with a minimum of three plots per unit, will be sampled by a fixed series of plots evenly distributed over the entire treatment area. The plot size will be a fixed radius measured in horizontal distance with the exception of basal area plots within Item 5 "merchantable material" will be completed using a 10 BAF plot.

On each plot the designated inspectors 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 individual items as listed below. To be considered satisfactory these items must meet the following criteria:

Definitions

Conifer – Typically an evergreen tree, which usually has a single well-defined trunk and/or attains a height greater than 20 feet (i.e. pine, spruce, and fir species)
Control Area (Cultural and/or Threatened and Endangered (T&E) Sites) - Areas delineated by orange and white candy cane flagging for the purpose of protecting resources of concern. Locations where special protection is required to preserve and protect cultural values and species of plants or animals listed on the T&E list.
Crown Ratio – The portion of the total vertical tree height that is occupied by the vertical length of the tree crown.
Damaged/Diseased Tree – Any tree with one or more of the following:

1. Broken or dead top, regardless of cause.
2. Vertical orientation of bole is lost.
3. Visible disruption of roots.
4. Dead or dying limbs/foliage within the upper three-fourths of the live crown

DBH – Diameter of trees measured at breast height (4.5 feet above ground, upslope side of tree).
Diameter - Other vegetation (not trees) is measured 1 foot above ground
Dominant/Co-dominant Tree – Trees generally of good vigor due to being the larger trees in the stand and their crowns receiving full sunlight from above and on much of the sides.
Excess Tree(s) – A tree or group of trees that is left, but should have been cut to meet spacing or trees-per-acre requirements.
Existing Down Woody Material – All logs, stems, limbs and tops of trees and brush, which are dead and lying on the ground prior to Contractor beginning operations.
Hardwood - A broad-leaved tree, which usually has a single well-defined trunk and/or attains a height greater than 20 feet. (i.e. aspen and oak species). Sprouting hardwood species may be in the form of multi-stemmed clumps.
Jackpot - Concentration of slash or natural fuels, heavier than the surrounding areas.
Ladder Fuels - Fuels that provide vertical continuity between the ground and the tree crowns thus are creating a pathway for surface fire to move into the overstory tree crowns.
Leave Tree – A Dominant or Co-dominant tree, which is free from Damage/Disease, or a tree less than the desired DBH specified, and is left uncut (or should have been left uncut) by the Contractor to meet desired spacing or trees per acre requirements. Any live tree greater than 20 inches dbh are automatically considered to be Leave Trees.
Leave Tree Clump – A group of 3 to 12 Dominant and Co-dominant trees in close proximity to one another, which is left (or should have been left) by the contractor to increase stand diversity.
Mobilization - The act of delivering all ordered personnel and equipment to the project area. The price for mobilization shall be included in the proposed unit prices.
Percent Cover – Portion of the project area beneath the drip line of vegetation to be cut or left untreated. Percent cover and treatment will be specified in C.8-2 Specifications.
Reserved Trees or Reserved Areas - Individual species of trees or certain areas within a

treatment unit that the contract or COR designates are reserved from treatment.
Residual Tree: See "Leave Tree"
Shrub (or brush) - Vegetation consisting of woody perennial plant smaller than a tree, usually having permanent single or multiple stems originating at or near the ground level not normally reaching 20 feet in height (i.e. bitter brush, manzanita, ceanothus, mountain mahogany, rhododendron, serviceberry, sagebrush, etc.).
Slash – Any cut vegetation and/or existing naturally (dead and down) woody debris. This includes stems, limbs, down logs, and brush that existed from previous activities or was generated by the contractor during current activities. Diameter to be piled, chipped, or removed will be specified. Limbs less than 1 inch in diameter and 2 feet in length are not defined as slash and may be left scattered on the forest floor.
Snag – A dead or living tree that has 10 percent or less live crown.
Superior Vigor Trees – Trees which exhibit healthy, dark green needle color. Needle length is longer, and reaches further back on branches. Needle length on inferior vigor trees is shorter and often tufted nearer branch tips. Recent height growth is also greater on Superior Vigor Trees. May not always be the largest/tallest tree.
Supervisor (foreman) - A working (English speaking) supervisor, who is knowledgeable and experienced in the required work and supervision, shall be provided for each crew and is required to stay with the crew while work is in progress. If crew is non-English speaking, the supervisor must be bilingual in English and the language of the crew members.
Suppressed/Intermediate Tree – Trees generally of poor vigor due to being overtopped or crowded by larger trees. The crowns of these trees usually receive little or no direct sunlight.
Undesirable Vegetation – Conifer trees less than 20.0 inches dbh with one or more of the following attributes:

1. Damaged/Diseased Trees.
2. Trees with Suppressed and/or Intermediate crown position classification.
3. Excess trees not selected as Leave Trees.

Water Body Buffer Zone (WBZ) - A 25 to 300 foot area extending upslope on each side of a stream channel or as described in C.8.2 Specifications.
Wildlife Clumps – An area usually between 1/100 acre and 1/4 acre in size, where no trees have been cut or no trees should have been cut. Wildlife clumps are ideally somewhat denser than the surrounding forest area, and are usually dominated by smaller trees, with fuller crowns. These clumps of trees tend to break up horizontal visibility through the stand, and offer various wildlife species a greater degree of cover and nesting possibilities