

Appendix C. Project Design Criteria (PDC)

The National Environmental Policy Act defines "mitigation" as avoiding, minimizing, rectifying, reducing, eliminating or compensating project impacts. The following project design criteria (PDC) are an integral part of this project and would be carried out when the project is implemented.

Aquatic Resources

Table 1 describes the riparian reserve widths for different bodies of water in the project area. Refer to this table to determine where project activities may occur within riparian reserves.

Table 1. Riparian reserve widths*.

Waterbody Type	Inner Riparian Zone	Outer Riparian Zone
Perennial Streams	0-60'	60-300'
Intermittent and Ephemeral Streams (except in units 27, 28, 45, 47 and 48)	0-30'	30-125'
Intermittent and Ephemeral Streams in Units 27, 28, 45, 47 and 48	0-50'	50-125'
Wetlands >1acre	0-60'	60-150'
Wetlands <1 acre, Seeps, or Springs	0-60'	60-100'

*Riparian zone widths are measured perpendicularly outward from the upper edges of the stream banks on both sides of the stream or from the perimeter of the wetland, seep or spring.

1. With the exception of backing of low intensity prescribed fire and inadvertent felling of trees, no project activities will occur within a wetted stream channel or within the perimeter of a seep, spring or wetland.
2. Hand thinning and prescribed fire are authorized activities within the inner riparian zone identified in Table 1, and all other activities are prohibited unless described elsewhere in this document.
3. In the outer riparian zone, density and fuels reduction activities, including, but not limited to, commercial treatments, mastication, machine piling, pile burning, and underburning, are authorized.
4. For inner riparian zone of perennial streams, do not decrease existing canopy cover.
5. For outer riparian zones of perennial streams retain at least 50% canopy cover.
6. For inner and outer riparian zones of intermittent and ephemeral streams, retain at least 40% canopy cover.
7. For inner riparian zone of wetlands, seeps or springs do not decrease existing canopy cover.
8. For outer riparian zones of wetlands, seeps or springs retain at least 40% canopy cover.
9. Within the inner riparian zone of all water body types, trees greater than 10" DBH will not be cut. With exceptions for dead or dying trees, cedar, pacific yew and hardwood tree species greater than 10" DBH will not be cut in the outer riparian zone.

10. Trees for commercial harvest must be felled away from or parallel to the inner riparian zone. Trees that are felled into this buffer (whether inadvertently or as trees felled to create yarding corridors or non-system roads) must be left on site.
11. Trees must not be felled into Tygh Creek or other perennial channels from November 1 to July 14 to comply with ODFW allowed periods of in-water work in the White River and Fifteenmile Watersheds.
12. If cable logging systems require use of hold trees that are within the Riparian Reserves, avoid using western redcedar, western white pine species, and any tree greater than 30 inches.
13. Spill Prevention - All trucks used for refueling will carry a hazardous material recovery kit. All vehicles and machinery will be free of petroleum leaks. Any leaks that occur will be immediately repaired. Power equipment will be refueled at least 150 feet from water bodies to prevent direct delivery of contaminants into a water body. If local site conditions do not allow for a 150-foot setback, then refueling will be as far away as possible from the water body, defined in the NWFP as portions of a watershed directly coupled to streams and rivers, that is, the portions of a watershed required for maintaining hydrologic, geomorphic, and ecologic processes that directly affect standing and flowing waterbodies such as lakes and ponds, wetlands, streams, stream processes, and fish habitats. For all immobile equipment, absorbent pads will be used. All petroleum products being transported or stored will be in approved containers meeting Occupational Safety and Health Administration and Oregon Department of Transportation standards. The Contracting Officer will be notified of any spills. Any contaminated soil, vegetation or debris will be removed from National Forest System lands and disposed of in accordance with state laws.
14. Ground-based mechanized equipment (e.g. skidder, dozer, feller-buncher) operation will not operate outside the Normal Operating (Dry) Season (generally June 1 – October 30) within Riparian Reserves unless approved through the existing waiver process by the District Ranger, based on recommendations from a soil, hydrology, and/or fisheries specialist.
15. Erosion control measures will be implemented to prevent off-site movement of disturbed or exposed soil associated with road and landing construction, use and decommissioning/closure (including cut-banks, fills, ditches, etc.) on road segments, including bridges and other waterbody crossings, that have the potential to directly or indirectly deliver sediment to any body of water. Erosion control measures include silt fences, wattles, straw bales, matting, mulch, slash, water bars, ditch check dams, grass seed, or other products. All erosion control measures that are left in place need to be made of 100% biodegradable, non-plastic materials. Sediment control features will be maintained in working order throughout project implementation and will remain in place, as appropriate, after activities are completed.

Yarding

1. Full suspension is required when cable yarding (including lateral yarding) over perennial stream channels. Full suspension over intermittent streams will occur whenever feasible, however, bump logs within the channel will be utilized if full suspension cannot be achieved.
2. Cable yarding operations will be required to maintain a minimum of one-end suspension except at the landing and tail trees where it is not possible. During lateral yarding, use one-end suspension to the extent practicable.
3. In Riparian Reserves, ground-based mechanical equipment, with the exception of masticators, will be required to operate on a continuous slash-covered path, as much as practical, to minimize soil

compaction.

4. Unless authorized elsewhere, ground-based mechanical equipment is prohibited within the inner riparian zone on all streams except on system roads and approved existing alignments across intermittent streams used as temporary roads.
5. With the exception of pre-existing road alignments, skid trails will not be designated to cross streams including perennial and intermittent channels.
6. Prohibit designating skid trails through wetlands or other wet areas.
7. Tethered ground-based equipment may operate on slopes up to 60% but the following will be applied:
 - a. Limited to dry season (generally June 1 – October 30).
 - b. Shall operate on slash mat.
 - c. Monitoring will occur after implementation for all units where tethered logging is used.
8. Construction of new temporary roads and landings within riparian reserves is prohibited.
9. Use of existing landings and temporary road alignments within riparian reserves will be allowed if erosion potential and sedimentation concerns to area streams can be mitigated, as determined by a District soil scientist, hydrologist or fish biologist. If a landing or temporary road alignment is approved for use in riparian reserves, erosion control measures will be installed prior to use, where appropriate, to prevent soil movement downslope from the landing. Erosion control measures may include, but are not limited to, straw bales around landing perimeter, wattles, rock surfacing, or avoidance during wet conditions. All erosion control measures that are left in place need to be made of 100% biodegradable, non-plastic materials. The portion of the landing outside a system road prism will be rehabilitated after use (compacted soils fractured, covered with slash or seeded and mulched). See other sections for resource-specific PDC pertaining to temporary and non-system road and landing construction.

Silviculture

1. Pruning will not exceed 6 feet in height, or more than half the tree height, whichever is less.
2. Within pine/oak and dry grand fir plant communities (outside of riparian reserves) Douglas-fir and grand fir greater than 24 inches DBH that are overtopping healthy ponderosa pine greater than 18 inches DBH and Oregon white oak greater than 14 inches DBH can be felled and removed with the approval of District silviculturist and fuels planner. Actions may also include thinning wholly or partially underneath the crowns of large diameter pines.
3. Within Surveyor's Ridge LSR (units 16, 181, 182, and 183), ponderosa pine greater than 20" DBH will be retained.
4. Within LSR unit 201, only treat the young-stand and understory component. Do not cut any material greater than 10" DBH.
5. Within LSR, gaps will occupy up to 10% of treatment units. Gaps (i.e. "openings") will be created

in a variety of sizes no larger than 2 acres. The sizes and total quantity will vary within and between units. Gap placements will occur outside of riparian reserves.

6. Within LSR, skips (i.e. “unthinned patches”) will occupy 10% of treatment units.

Fuels

1. Hand piles will be a minimum of 6’ in diameter and 6’ in height.
2. Machine piles will be a minimum of 10’ in diameter and 10’ in height.
3. All piles will be as wide as they are tall.
4. No piles will be constructed on stumps or on sections of large down logs.
5. All piles will be as compact and free of dirt as possible.
6. All material will be contained within the general contour of the pile.
7. All hand piles will be covered. Covering will consist of 6 mil black plastic (polyethylene) or an equivalent water-resistant barrier. Forest Service personnel will approve prior to use. Place cover on the pile when it is approximately 75% complete and overlays at least half of the pile. Place remaining slash on top.
8. Mechanical piling will be done with equipment capable of picking up (grasping) slash material and piling.
9. All piles will be located so that burning will not cause damage to residual trees or snags. Piles will be located outside the drip line of leave trees.
10. Piles will not be placed on or in the following areas: pavement, road surface, ditch lines, or the bottom of ephemeral channels.
11. All hand piles for prescribed burning created within the inner riparian zone must be at least 30’ away from the stream bank or edge of a wetland, spring, or seep. Slash and other debris not placed in hand piles for burning should be scattered over the inner riparian zone (not left in piles).
12. Slash resulting from fuels reduction and non-commercial treatments will be piled concurrently with the thinning activities. Piles should be burned within 2 years of construction.
13. Low severity burns should constitute the dominant type of controlled burn within Riparian Reserves, resulting in a mosaic pattern of burned and unburned landscape.
14. If hand-built fire lines are constructed on slopes exceeding 20%, construction of water bars will be required.
15. Water used for fuels treatment may be drawn from sources near the units treated. Diversions will not exceed 25% of the available flow and fish screen(s) will be installed, operated, and maintained according to NMFS’s fish screen criteria (NMFS 2011e stating that pipe intakes will be screened with woven wire screens having a maximum 1.75 mm gap, and perforated plate screens will have a maximum opening of 3/32nd inch). The District Fish Biologist or District Hydrologist will be consulted prior to utilizing any water sources.

16. Do not pump directly from a water source if chemical products are going to be injected into the pump or pumping system. If chemicals are needed, use a fold-a-tank from which to pump water. Do not use surfactant and foam near waterbodies and in Riparian Reserves.

Wildlife

1. No timber harvest activities, mechanical fuels treatments, or temporary road construction will occur from March 1 to July 15 in units: 11, 15, 16, 17, 34, 35, 36, 37, 38, 39, 40, 42, 43, 48, 49, 50, 51, 60, 61, 62, 63, 70, 71, 201.
2. If a new spotted owl nest is located during the period of the contract, the nest and core areas will be protected.
3. No burning activities will take place between March 1 and September 30 unless first approved by a FS wildlife biologist.
4. No new temporary roads will be constructed in nest patches.
5. An average of 6 logs per acre in decomposition classes 1, 2 and 3 will be retained. Logs will be at least 20 inches in diameter at the small end and have a volume of 40 cubic feet. Skid trails and skyline locations will avoid disturbing key concentrations of down logs or large individual down logs where possible.
6. Snags will be retained in all units where safety permits. If snags must be cut for safety reasons, they will be left on site.
7. Dead or dying standing trees 12" DBH or below may be felled.
8. Buffers for Survey and Manage species needing protection will be designated on-the-ground prior to ground disturbing activities (units 3, 6, 9, 11, 12, 20, 25, 50, 56, 58, 72, 74, 86). Additional units may be identified based on results of forthcoming surveys.
9. If a wolf den or rendezvous site is found in or near the project area, no activities associated with the proposed action will be allowed within one mile of the den or rendezvous site from April 1 through July 15.
10. If a raptor nest is found, the area will be protected according to the buffers as defined by forest plan standards.
11. A District wildlife biologist will approve all implementation activities in the B4 land use allocation between December 1 and April 1 to ensure prevention of the harassment of deer and elk (Units 1,2,3, 4,5, 6,19, 20, 21, 22, 23, 24, 45, 46, 47, 48, 50, 51, 52, 53, 54, 55, 56,57, 58, 59, 60, 61, 62,63,64,65, 80, 81, 82, 83,84, 85, 86, 87, 88, 89, 90, 91, 92, 93, 94, 95).

Soils

1. Skid trails will be designated and approved prior to harvest by the Forest Service. When feasible, they will be located on previously disturbed areas, such as old landings or skid trails.
2. If scree slopes are identified during implementation, mechanical treatment will not occur within 100

feet of scree slopes.

3. Landing locations will be approved by the Forest Service prior to operations.
4. Mechanical fuels treatments (mastication) will only occur on slopes up to 30%.
5. Avoid repetitive passes by heavy equipment except over designated primary routes (i.e., roads, or skid trails). Restrict travel of heavy equipment off designated primary routes to two passes or fewer.
6. Limit, as feasible, heavy equipment, particularly tracked machinery from pivoting or unnecessary side-hill travel on slopes greater than 15 percent. Travel will mostly be down the fall-line and perpendicular to the contour of the slope.
7. Meadows and wetlands identified on treatment maps will be protected by not allowing new temporary roads, landings, or skid trails or ground-based equipment to operate within the delineated area.
8. The contract administrator and soils/hydrology resource specialist will coordinate to monitor and evaluate soil conditions outside of the normal operating season (June 1 – October 31) to determine when they are suitable (e.g. dry enough) for operations.
 - a. Start of operations will be approved on a unit-by unit-basis due to differing soil types in the area since some soils may be more prone to detrimental damage than others.
 - b. Monitoring will be conducted to determine when soil conditions are beginning to become too wet for operations.
9. Ground-based operations will be suspended during wet periods when soil moisture is high and off-trail heavy equipment tracks sink deeper than 6 inches below the soil surface with one or two passes (or if tracks in primary skid trails sink deeper than 12 inches); particularly during spring, after heavy or prolonged rain, or in late fall.
 - a. Rainfall guidelines for when to temporarily defer or cease ground-based operations:
 - i. If it rains at least 0.3 inches per 4-hour period.
 - ii. When precipitation for the prior 24- hour period (1:00 A.M. – 12:00 A.M.) as recorded at the Wamic Mill RAWS site (<https://raws.dri.edu/cgi-bin/rawMAIN.pl?orOWAM>) is 0.6 inches or greater.
10. For whole-tree harvest systems, primary skid trails will be spaced at least 100 to 150 feet apart at the furthest termini from the landing, except where terrain limitations dictate otherwise.
11. For cut-to-length harvest systems, spacing of primary forwarder trails will be at least 65 feet, except where terrain limitations dictate otherwise. To the extent possible, slash mats will be deposited over primary forwarder trails during cutting operations.
12. Erosion control will occur on all skid trails and landings immediately after harvest activities.
13. For cable logging methods, spacing of yarding corridors for parallel settings will be at least 100 feet apart, and 150 feet at the tail-hold for radial settings. When feasible, previously used yarding corridors will be used. Limit the establishment of skyline yarding corridors that clear corridors of trees over all streams to no more than five corridors per 1,000 linear feet of stream. Individual

corridor widths will not exceed 12 feet.

14. For cable logging methods, retain trees that have been used as guy line anchors, tail-holds, or intermediate supports for future coarse woody debris (CWD) recruitment.
15. For tethered logging methods, spacing of yarding corridors will be at least 65 feet apart.
16. For tethered logging methods, tethered logging applications will be approved by the Forest Service on a unit by unit basis.
17. Crushed aggregate or other rock may be used when necessary to reduce erosion, puddling, ponding, rutting, soil displacement, or compaction on temporary roads and landings. The applied rock will be removed or incorporated into the soil by decompaction to a depth of 24 inches following harvest. If rock is not utilized, temporary roads and landings will be decompacted to a depth of 24 inches or scarified to a depth of 12 inches to provide an efficient base for vegetative growth and water infiltration.
18. Haul will not occur on native surfaced roads during wet conditions unless hardened with crushed aggregate or other rock, and drainage structures or other erosion control measures are installed to prevent sediment delivery to streams and protect the road surface.
19. Haul routes will be inspected weekly during operations, or more frequently if weather conditions warrant. Inspections will focus on road surface condition, drainage maintenance, and sources of soil erosion and sediment delivery to streams. If sediment traps are used, they will be inspected weekly during wet conditions and entrained soil would be removed when the traps have filled to $\frac{3}{4}$ capacity. Removed materials will be deposited in a stable site that is not hydrologically connected to a stream.
20. Winter Operations will only occur when the ground is frozen on the surface and to a depth of at least 6 inches, and when the snowpack is at least 24" deep and firm. Temperatures will remain below freezing for at least 8 hours in a day. Winter operations will be considered on a unit by unit basis because of the different soil types in the area.
 - a. Guidelines for when conditions are no longer favorable for ground-based operations over the snow:
 - i. When rain-on-snow softens the snowpack.
 - ii. When the temperature is above freezing for more than 8 hours per day and the snow pack becomes soft.
 - iii. When heavy equipment ruts in the snowpack have become mixed with mud.
21. Mechanical piling of post-activity fuels will be limited, as is feasible, to existing primary travel routes and skid trails. Restrict travel of heavy equipment off designated primary routes to two passes or fewer.
22. Machine piling of slash during fuels treatments will generally be avoided on slopes over 30 percent. Minimize impacts of machine piling by piling no more than needed to break up fuel continuity.
23. Maintain effective ground cover and organics by retaining >50% of litter/duff depth as is feasible wherever it exists.
24. Prohibit all activities in unstable or potentially unstable areas within units 13 and 62. These areas are

identified by features such as crevices in soil, tipped trees at multiple angles, and slump formations. The unstable areas will be identified by a Forest geologist or soil scientist through field surveys of treatment units.

Transportation

1. If in-water work is determined to be required, follow the appropriate Oregon Department of Fish and Wildlife (ODFW) guidelines for timing of in-water work (in this watershed the in-water work window is July 15 to October 31), and requirements outlined in the Forest Service Best Management Practices Handbook (2012) and the Routine Actions and Maintenance Activities Programmatic (2018)¹. Exceptions to the ODFW in-water work windows will be requested by the Forest or its contractors, and subsequently approved by ODFW, U.S. Army Corps of Engineers, and Oregon Division of State Lands.
2. All signing requirements on roads that are open for public use within the Mt. Hood National Forest will meet applicable standards as set forth by the Manual of Uniform Traffic Control Devices (MUTCD). Some roads accessing State and County highways will require additional signing to warn traffic of trucks entering onto or across the highway.
3. Unsuitable excavation² from ditch cleaning or other operations will be disposed of at Forest Service approved sites. Material disposed of will be spread evenly over an appropriate area outside of riparian reserves and with a maximum layer thickness of 4 feet. All disposals will be seeded and mulched at the completion of operations, and prior to the wet season.
4. The use of steel-tracked equipment on asphalt or similar surface roads will not be used unless approved by a Forest Service representative. If a suitable site for the loading and unloading of equipment and materials is not available, then use of a paved surface may be permitted provided that the purchaser uses approved matting materials (such as wood chip or crushed rock) to protect the road surface. Purchaser is responsible for restoring roads to existing condition.
5. Temporary roads and landings located on or intersecting National Forest System (NFS) roads that are asphalt or similar surface will have 3-inch minus or finer dense graded aggregate placed at the approach to prevent surface damage. The purchaser will purchase the material from a Forest Service-approved commercial source and place the material so that the approach flares are wide

¹ Endangered Species Act Section 7(a) (2) Programmatic Biological Opinion and Magnuson-Stevens Fishery Conservation and Management Act Essential Fish Habitat Response for Routine Actions and Maintenance Activities of USDA Forest Service, USDI Bureau of Land Management, and the Coquille Indian Tribe on Lands Held in Trust for the Tribe by the Bureau of Indian Affairs in Western Oregon and Southwest Washington (RAMBO).

² Soil that is silty, sandy, saturated, frozen, or contains clay, organics, or other material that would be unsuitable for use in road construction and maintenance work. (Unsuitable excavation, by specification, is any material containing excess moisture, muck, frozen lumps, roots, sod, or other deleterious material along with certain types of soil that contain unacceptable amounts of silt or clay have insufficient load bearing properties and are considered unsuitable for use in construction of any structural component of a roadway. Therefore this type of material, typically found in ditches or slide material, needs to be end-hauled and disposed of).

enough to accommodate the off-tracking of vehicles entering onto or leaving the site.

6. Appropriate measures will be taken to prevent or reduce mineral soil contamination to aggregate surface roads. If contamination occurs, the purchaser will repair contaminated areas with specified aggregate surfacing. Mineral soil contamination degrades and reduces the load bearing capacity of the existing aggregate surface road.
7. The appropriate Forest Service specialist will be consulted whenever:
 - a. Temporary roads will be constructed in areas with an existing cross-slope greater than 40%,
 - b. Temporary roads will have a road grade above 15% for any distance greater than 2,000 feet, or
 - c. Temporary roads will have a road grade above 18% for any distance greater than 600 feet.
8. Temporary roads and National Forest System roads which are designated for 'project use only' will be closed to public use. The purchaser will sign the entrance to such roads with "Logging Use Only" signs and make every reasonable effort to warn the public of the hazard and to prevent any unauthorized use of the road.
9. All slash created through road repair/reconstruction and/or road maintenance including temporary road construction will be machine grapple piled outside the road prism. Construction and placement of piles will adhere to all other resource area PDC.

Road Work (System Road Maintenance and Repair/Reconstruction)

1. Road maintenance and reconstruction activities will to be implemented during the dry season (generally June 1 to October 30) unless the road segment has no hydrologic connection to streams. Require all waste material generated from road maintenance (ditch cleaning, blading, etc.) be placed in a pre-designated area outside of Riparian Reserves.
2. Minimize disturbance of existing vegetation in ditches and at stream crossings. Leave grass in the ditch if the ditch is properly functioning to minimize exposed soil and transport to fish-bearing streams. When removing vegetation from ditch lines where ditches are hydrologically connected to any stream, install an effective sediment trap to prevent ditch erosion from entering streams (e.g. wattles, mulching cleared ditches within 100' of stream crossing culverts) until vegetation is re-established. Dust abatement is limited to the application of water.
3. Surface water may be diverted to meet dust abatement, maintenance or construction needs, but only if developed sources are unavailable or inadequate. Surface water may be diverted only from water sources identified by Forest Service staff prior to diversion activities. Diversions may not exceed 25% of the available flow and fish screen(s) will be installed, operated, and maintained according to NMFS's fish screen criteria (NMFS 2011e stating that pipe intakes would be screened with woven wire screens having a maximum 1.75 mm gap, and perforated plate screens would have a maximum opening of 3/32nd inch).

Timber Transport (Haul)

1. System roads used for haul will meet minimum design standards to ensure safe haul without road failure. Timber haul is prohibited on roads that are failing, or likely to fail, if failure causes direct sediment impacts to streams.

2. If road or landing use may result in road damage or sediment delivery to a stream, haul operations will be stopped immediately, even in the dry season. Examples may include rutting of the road surface, ponding of water on the road, failure of any drainage structure, or other situation. The road must be repaired before haul can continue.
3. There are no timing restrictions on haul over paved roads.
4. Log and rock haul on aggregate or native (system and temporary) roads or use of landings will be prohibited at any time there is 0.5 inch of precipitation within any given 24-hour period as measured at the lowest elevation along the haul route. To measure precipitation, the purchaser may install a temporary rain gauge on National Forest System land near or adjacent to the lowest elevation along the haul route; otherwise, precipitation will be measured according to a running average of the data measured from the Wamic Mill RAWS station. Data for these RAWS stations can be found at <https://raws.dri.edu/cgi-bin/rawMAIN.pl?orOWAM>
5. Addition of gravel (including blading and compacting) for wet season haul and unforeseen slide removal is allowed in the wet season, upon Forest Service approval.

Temporary Road Closure

1. Temporary roads used during project implementation would be obliterated and landings will be scarified upon completion of project activities. Culverts will be removed and cross-drain ditches or water bars would be installed as needed. Disturbed ground will be seeded and mulched or covered with slash. Logs, or root wads will be placed across the road or landing surface. Post-harvest motorized access will be prevented through the construction of a berm, placement of large boulders, or other approved techniques. The coverage of effective ground cover will be sufficient to prevent off-site movement of soils as guided by Forest Plan standard and guideline FW-025 and by Forest Service Handbook 2509 (R6 supplement).

Heritage

1. In accordance with 36 CFR 800 and Section 106 of the National Historic Preservation Act (1966), all known cultural and archaeological sites within the project planning area which are eligible or potentially eligible (unevaluated) for listing on the National Register of Historic Places (NRHP) will be protected throughout the life of the project.
2. Cultural and archaeological site boundaries within or immediately adjacent (100 feet) to project activities will be buffered by 100 feet and flagged for avoidance. A map will be provided to the sale administration and fuels planning staff prior to implementation with buffered site boundaries labeled as “Sensitive Resource – Area to Protect.”
3. The project lead will consult with a Forest Service Archaeologist on locations of equipment staging and access routes and any modifications in project location or design before any activities proceed.
4. If during project activities cultural material is encountered, all work will cease immediately, and a Forest Archaeologist will be contacted to evaluate the inadvertent discovery. A mitigation plan, if needed, will be developed in consultation with the Oregon State Historic Preservation Office (SHPO) and the Confederated Tribes of Warm Springs Reservation of Oregon, the Confederated Tribes of Grand Ronde, and Tribal Historic Preservation Office (THPO) as appropriate.

5. Fire control line will be constructed, using either wet line or hand line, around all fire sensitive heritage resources. Prescribed burning may occur within heritage resources which are not fire-sensitive, but piling will not occur within the flagged buffer zones.
6. Historic ditches that are eligible for listing will be buffered by 50 feet on both sides and flagged for equipment avoidance. Hand work may occur. If crossings are needed, locations of previously disturbed sections will be identified by a Forest Service archaeologist for equipment travel routes.

Recreation

1. A minimum of two weeks advance notice will be provided to recreation specialists before timber or fuels management activities occur.
2. Informational signs regarding timber harvest and fuels activities will be posted by Forest Service staff at affected campgrounds and trailheads near the project area, including but not limited to Badger Creek Trailhead, Bonney Crossing Campground, Little Badger Campground, and School Canyon Trailhead.
3. Timber and fuels staff will work with recreation specialists to develop public information materials and outreach plan using a combination of key entry/exit portals, visitor information boards and outreach via websites and other information sources.
4. Any damage to trail tread, corridor, or signage on trails within the project area from timber or fuels management activities will be restored to a similar condition previous to management activity. Timber and fuels management activities include felling, hauling, skidding, mulching, mastication and prescribed burning.
5. Landings will not be located on system trails or recreation sites.
6. If timber or fuels management activities are anticipated to continue beyond the current operating season, then temporary effective closure of temporary roads and skid trails would occur to prevent unauthorized use.
7. Project activities (excluding prescribed burning) will not occur on holiday weekends.

Visual Quality (Scenic Resources)

1. Modification VQO will be achieved within one year after completion of project activities.
2. When feasible, slash piles should be at least 100 feet from roads.
3. When feasible and reasonable, within 100 feet of roads develop slash piles behind existing vegetation as a way of visually concealing piles from roads, or concentrate piles in areas not seen from roads.
4. Mark side of tree facing away from road and trails within 100 feet of roads.
5. Boundary tags, flagging, and markers will be removed within 100 feet of roads in treatment units after completion of activities.
6. To the extent possible, align temporary roads so view down temporary roads from roads are limited.

7. Logging system design should focus landing locations away from system roads whenever possible. Where topography or treatment unit widths restrict landing location to close proximity of the roadside, the use of pre-existing landings or other openings are preferred.
8. When feasible, long views down skid-trails will be avoided when seen from roads.
9. Any berms used during decommissioning of temporary roads that are visible from roads will be seeded and mulched.
10. Stump height will be 6-8" within 100 feet from roads.
11. Where feasible and reasonable, flush cut stumps on level land; on slopes, ensure faces of stumps are not visible within 100 feet of roads.

Botany and Invasive Plants

1. In order to prevent the spread of invasive plants, all equipment will be cleaned of dirt and weeds before entering National Forest System lands. This practice will not apply to service vehicles traveling frequently in and out of the project area that will remain on the roadway.
2. If the need for restoration/revegetation of skid trails and landings is identified, the use of native plant materials is the first choice for meeting this objective where timely natural regeneration of the native plant community is not likely to occur. Non-native, non-invasive plant species may be used in any of the following situations:
 - a. when needed in emergency conditions to protect basic resource values (e.g., soil stability, water quality and to help prevent the establishment of invasive species)
 - b. as an interim, non-persistent measure designed to aid in the re-establishment of native plants
 - c. if native plant materials are not available
 - d. in permanently altered plant communities
3. If using straw, hay or mulch for restoration/revegetation in any areas, use only certified, weed-free materials.
4. Inspect active gravel, fill, sand stockpiles, quarry sites, and borrow material for invasive plants before use and transport. Treat or require treatment of infested sources before any use of pit material. Use only gravel, fill, sand, and rock that is judged to be weed free by District or Forest weed specialists.
5. Coordination for project sites and staging areas will occur with botanical staff to avoid areas that have high concentrations of invasive species. If use of these areas is identified, effort should be made to treat populations a year ahead of time to reduce the spread of infestations.
6. Protection buffers will be placed around known sensitive botanical sites. Protection buffer locations will be provided to sale administration and fuels planning staff.
7. Only low to moderate intensity prescribed fire activities would occur within the vicinity of mapped sensitive botanical sites. Maps will be provided to fire staff.

Range

1. Protect existing range improvements.
2. Any unmapped range improvements discovered during project activities will be protected with a 50 foot buffer and avoided. The range specialist will be notified of the location. The area would be avoided until the range specialist has completed inspection of the area and determined measures for protection.