Summit GNA

KL-341-2026-GF8525-01

Cruise Report

"STEWARDSHIP IN FORESTRY"

SALE NAME: Summit GNA

LEGAL DESCRIPTION:

Portions of Sections 7, 18, 19, 30, 31 T2N R38E, portions of Section 31 T1N R38E, and portions of Section 6 T1S R38E in Union County, Oregon.

Portions of Sections 13, 23, 24, 25, 26, 35, 36 T2N R37E, portions of Sections 1, 2, 12, 13, 14, 23, 24, 25, 36 T1N R37E, and portions of Section 1 T1S R37E in Umatilla County, Oregon.

BOUNDARY LINES:

Unit boundaries are marked with "Timber Sale Boundary" signs, orange paint, and blue flagging. Discernable virtual boundaries are easily recognizable features on the ground (such as a road or fence). Geo-fence virtual boundaries are boundary locations on the ground that are represented on a geo-referenced map.

ACREAGE:

Gross Sale Acreage:	1,302 Acres
Exclusion Acreage:	0 Acres
Net Sale Acreage:	1,302 Acres

Mapping was accomplished using a handheld Global Positioning System unit with the data run on the district Geographical Information System program.

TREATMENT:

The Timber Sale is a partial cut harvest.

CRUISE METHOD:

Variable radius plot cruise with a 1:1 measure to count plot ratio.

BASAL AREA FACTOR:

Area	BAF	Type Acreage
Whole Sale	20 BAF	1,302

MEASUREMENTS AND GRADING:

- DBH and height were measured on all "in" trees for measure plots.
- All trees were graded using the segment system.

TREE HEIGHT:

Two tree height measurements were taken as part of the cruise. Total tree height and merchantable tree height.

Merchantable tree height was measured at a fixed diameter inside bark (DIB). This height is taken as high up the bole as possible, where the cruiser can clearly see the bole, and the DIB is approximately a minimum of 6 inches.

MINIMUM D.B.H:

8.0" DBH for sawlog volume. 5.0" DBH for pulp log volume.

DIAMETER STANDARDS:

1" diameter class

BTR:

A bark thickness ratio of 0.92" was used for all species except lodgepole, where a ratio of 0.97" was used.

FORM FACTOR:

Form factor was measured or estimated at 16' for each tree. Every "in" tree on measure plots was assigned its own form factor.

FORM POINT:

DBH for all trees.

VOLUME COMPUTATION:

All cruise data was input and run at the district on Atterbury's Super Ace 2024 program.

FINAL CRUISE RESULTS:

AREA	CV%	SE%	ACRES
Whole Sale	100.95	6.5	1,302

TIMBER DESCRIPTION

SAWLOG VOLUME:

This volume was obtained from the variable radius plot cruise. All material was graded camp run. See grade table for minimum standards.

TOTAL SAWLOG VOLUME

Species	Avg. DBH	Vol/Acre (Tons)	Net Sale Vol (Tons)
Grand Fir	11.9	15	20,190
Western Larch	13.8	9	12,254
Douglas-fir	15.2	8	10,516
Englemann Spruce	13.7	3	3,713
Ponderosa Pine	15.3	2	2,350
Subalpine Fir	9.1	.5	534
Lodgepole Pine	15.3	.5	559
	Total	38	50,116

Project Design Criteria & Mitigations Crosswalk:

Summit Road Fuel Reduction CE

Implementation Project: Summit GNA TS

Design Criteria & Mitigation are from the ROD, with edits to shorten and eliminate duplication. This tracker is kept for each implementation project associated with the NEPA. It is kept in implementation files (pre-sale folder, prescription folders, burn plan folder, timber sale admin notes). It is available for discussion at implementation coordination meetings and reviews with IDT members. The appropriate method that needs to address each item has a checkmark in the box. Items to be specially noted in Notes to Sale Administrator are designated with (*).

This crosswalk is designed to refer the IDT members to the section of the contract or exhibits where each mitigation measure is addressed.

Subject	Design Feature	ODF Contract	Applicable Unit(s)	Method Addressed			
				Layout	Contract	TS Admin	Specialist
Air/Fire/Fuels FF-1 **Rx Burning**	Prepare a prescribed fire plan consistent with National Interagency Prescribed Fire Plan Guidebook well in advance of ignitions.		Not applicable				
Air/Fire/Fuels FF-2 **Fuel Load**	Fuels should not exceed an average of 9 tons per acre in the 0-3inch size class and an average residue depth of 6 inches in management area E2.		Not applicable				
Air/Fire/Fuels FF-3 **Fuel Load**	Fuels should not exceed an average of 12 tons per acre in the 0-3inch size class and an average residue depth of 6 inches in management area C4.		Not applicable				
Air/Fire/Fuels FF-4 **Road Clearing**	Road clearing fuels should be masticated, chipped, or piled and burned.	Section 2560. Slash Disposal	All		X	X	
Air/Fire/Fuels FF-5 **Mastication**	Masticated fuels should have a minimum piece size of 12 inches and the average slash depth should be less than or equal to 18 inches.	Section 2130 (e).Road Maintenance	All		X	X	
Air/Fire/Fuels FF-7 **Smoke Mgmt.**	Follow all guidance by Oregon Department of Forestry (ODF)'s smoke managers.		All			X	
Fisheries FR-1 **Rx Burning**	No prescribed fire ignitions will occur within category 1, 2, or 3 Riparian Habitat Conservation Areas (RHCA) or within 50' of category 4 streams.		Not applicable				
Fisheries FR-2 **Rx Burning**	Prevent prescribed fire from backing into Category 1 RHCA.		Not applicable				
Fisheries FR-3 **PDCs**	See additional hydrology PDCs.		All				X

Heritage HR-1 **Heritage Buffers**	All known historic properties that are eligible or unevaluated for the NRHP will be flagged for avoidance with a buffer of at least 10-meters. No ground disturbing activities or equipment staging will occur in these structures.	Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources. Section 2435. Protection of Cultural Resources	All	X	X		
Heritage HR-2 **Haul Route**	Proposed haul routes that run through the boundaries of eligible or unevaluated historic properties that are on native surfaced roads will be protected with landscaping cloth and gravel.	Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources. Section 2435. Protection of Cultural Resources	All		X	X	
Heritage HR-3 **Rx Burning**	Prescribed burn activities will not occur near historic properties that are sensitive to fire (wooden structures, rock art, etc.).		Not applicable				
Heritage HR-4 **IDP**	An Inadvertent Discovery Plan (IDP) was developed for this project in case historic properties or human remains are inadvertently discovered during project implementation. This document has been shared with the District Ranger and Project Proponent.	Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources. Section 2435. Protection of Cultural Resources	All		X		X
Invasive Plants IP-1 **Weed Treatment**	Invasive plant sites will be treated consistent with the 2005 Region 6 Invasive Plant FEIS and ROD that amended the Umatilla Forest Plan in March 2006, and the July 2010 Umatilla National Forest Invasive Plant Treatment Project FEIS and ROD.		All				X

Invasive Plants IP-2 **Equipment Inspection**	Prior to moving onto National Forest lands, ensure that all off-road equipment is free of soil, seeds, vegetative matter, or other debris that could contain seeds. In addition, prior to moving off-road equipment from a site known to be infested with invasive species to any other site that is believed to be free of noxious weeds, reasonable measures will be taken to make sure equipment is free of soil, seeds, vegetative matter, or other debris that could contain seeds (timber sale contract provision B/BT 6.35 or equivalent provision).	Section 2416. Protection from Invasive Plants and Noxious Weeds.	All		X	X	
Invasive Plants IP-3 **Weed Avoidance**	Project or contract maps will show current inventoried high priority noxious weed infestations as a means of aiding avoidance and/or monitoring.		All			X	
Invasive Plants IP-4 **Parking**	Do not locate parking areas within invasive plant sites.	Section 2416. Protection from Invasive Plants and Noxious Weeds.	All		X	X	
Invasive Plants IP-5 **Road Maintenance**	Road blading, brushing and ditch cleaning in areas with high concentrations of invasive plants will be conducted in consultation with District invasive plant specialists. Invasive plant treatment and prevention practices will be incorporated as appropriate.	Section 2416. Protection from Invasive Plants and Noxious Weeds.	All			X	X
Invasive Plants IP-6 **Road Materials**	All gravel, fill, sand stockpiles, quarry sites, and borrow material will be inspected for the presence of invasive plants before use and transport. Use only gravel, fill, sand, and rock that are judged to be weed seed-free by District invasive plant specialist.	Section 2416. Protection from Invasive Plants and Noxious Weeds.	All		X	X	
Invasive Plants IP-7 **Weed Free Straw**	Noxious weed-free straw and mulch will be used for all projects conducted or authorized by the Forest Service on National Forest System Lands. If State certified straw and/or mulch is not available, sources certified to be weed-free using the North American Weed Free Forage Program Standards, or a similar certification process, will be required.	Section 2416. Protection from Invasive Plants and Noxious Weeds.	All		X	X	

Invasive Plants IP-8 **Seeding**	Re-establish vegetation on exposed soil during the first spring or fall possible following disturbance from project activities, as determined by the botanist or invasive species specialist. Revegetation would be required when timely natural regeneration of native species is not expected, or when competitive revegetation would reduce the risk of spread of noxious weeds in disturbed soil. Areas that may require revegetation include but are not limited to landings, burned piles, temporary roads, ground-based or tethered logging units, and control features.	Section 2360. Non-project Roads and Landings.	All		X	X	X
Invasive Plants IP-9 **Rx Burning**	For prescribed burn operations: - Monitor natural succession to ensure desired native species are recovering where burn intensity is low to moderate and invasive plants are absent. - Generally, where invasive plants are present or burn intensity is high, seed to promote native vegetation recovery and prevent the establishment of invasive plants. Revegetation needs will be assessed by the botanist or invasive species specialist to determine the extent of seeding required based on site conditions. Minimize soil disturbance and remove only enough vegetation to accomplish control objectives during fire line construction, mop-up, and rehabilitation activities.		Not applicable				
Invasive Plants IP-10 **Seed Selection**	Native, genetically appropriate plant material will be given primary consideration in all revegetation associated with this project. Appropriate plant/seed collection and movement guidelines will be followed. Non-native plant materials use is restricted to situations where native plant materials are unavailable, and timely reestablishment of a native plant community is not likely to occur. In such cases, only non-persistent, non-invasive species meeting the	Section 2360. Non-Project Roads and Landings Section 2416. Protection From Invasive Plants and Noxious Weeds	All			X	X

	Regional Native Plant Species Policy would be used. Restoration prescriptions will be developed with consideration to site-appropriate species selection, genetic heritage, growth stage, and site preparation (if needed). Noxious weeds will not be used in this project.						
Recreation RE-1 **Management Area A4**	In Management Area A4, prescriptions will adhere to Partial Retention VQO in the foreground (up to 0.25 mile from roadside) to Modification VQO in the middle ground (0.25 mile to 3-5 miles distant from roadside). Roadside areas will receive priority treatment for pile burning and rehabilitation of landing locations, skid trails, and other visually disruptive features left over from harvest activities.		ODF Units 2, 3, 4, 8, 9, 11, 13, 21 through 33, 35, 36, 37, 38, 39, 41, 42, 43, 44, 46, 49, 50, 51, 52, 53, 57, 58, 59, 60, 61, 62, 64, 65, 66, 67, 69 through 76				X
Recreation RE-2 **Management Area A5**	In Management Area A5, prescriptions will adhere to Partial Retention VQO.		ODF Units 3, 5, 8, 18, 21, 24, 30, 25, 27, 32, 64				X
Recreation RE-3 **Management Area A9**	In Management Area A9, prescriptions will adhere to Retention VQO. In the Greyrock Special Interest Area, treatments will be designed specifically to enhance the viewshed from the overlook. This may involve thinning stands of dense trees, removing underbrush via hand thinning or burning, and opening the stand up to create a visually appealing, parklike appearance.		ODF Units 5, 9, 10, 52				X
Recreation RE-4	In Management Areas C4, and a range of VQOs are allowed, but all of them are subordinate to the overarching old growth, big game, wildlife, or riparian objectives for which the management area was created.					X	X

Management Area C4							
Recreation RE-5 **Management Area C8**	In Management Area C8, a range of VQOs from Retention to Modification are allowed.					X	X
Recreation RE-6 **Management Area E2**	In Management Area E2, prescriptions will adhere to Modification VQO. In instances where the post-treatment landscape no longer meets the Modification VQO, the area will be rehabilitated to meet that standard.					X	X
Recreation RE-7 **Dispersed Sites**	Dispersed sites may be used for staging or landing areas when other options are not available. In this situation, the dispersed site will receive priority for post-harvest cleanup and rehabilitation. Dispersed sites that are causing resource damage or extend greater than 300' from the road may be removed.	Section 2425. Recreation, Trails, Signage, and Structure Protection.	All		X	X	X
Roadless Area RA-1 **Thinning**	Thin from below targeting generally small diameter trees.	Section 2320. Thinning Specifications.	All		X	X	
Roadless Area RA-2 **Road Construction**	No road construction or reconstruction or temporary road creation.	Section 2120. Access	All		X	X	
Roadless Area RA-3 **Design Criteria**	Follow all design features to reduce impacts to soil, water, botany, fisheries, and wildlife.	Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources. Section 1650. Protection of Soil, Air, and Water Resources.	All	X	X	X	X

Road Management RM-1 **Road Condition**	Operational conditions of the road system will be improved to support levels of traffic.	Section 2130. Road Maintenance	All		X	X	
Road Management RM-2 **Commercial Haul**	Roads will be maintained to mitigate the impacts of commercial haul on the transportation system.	Section 2130. Road Maintenance	All		X	X	
Road Management RM-3 **ML-1**	Management Level 1 roads will be stabilized in such a way that erosion risks from storms and seasonal run-off are minimized.	Section 2130. Road Maintenance	All		X	X	
Road Management RM-4 **Reconstruction**	Correct deficiencies within the road system by improving drainage capacity, out sloping, surfacing, or any other tasks necessary to return the road system to the operational standard.	Section 2130. Road Maintenance	All		X	X	
Road Management RM-5 **RHCAs**	Trees may be felled in RHCAs when they pose a safety risk. Keep felled trees on site to meet down wood objectives for sedimentation retention.	Section 2415 (d). Protection of Watershed.	All		X	X	
Road Management RM-6 **Signage**	All necessary signage and safety standards would apply to all roads open to the public while project activities are occurring.	Section 1610. Permits; Licenses; Safety.	All		X	X	
Sensitive Plants BOT-1 **SMAs**	Populations of sensitive species that are in or near areas with proposed activities will be designated as “Special Measures Areas” (SMAs). Sensitive plant populations within units will be flagged and protected from ground disturbance including log decking, yarding, slash piling (including masticated materials), and landings. Vehicle and equipment parking will be avoided in all SMAs. Appropriate buffer distances will be developed by the botanist to conserve these species. SMAs will be clearly marked on implementation planning maps. Timber sale administrator and/or implementing staff will notify botany staff when activities are scheduled to begin in areas where SMAs are designated.	Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources.	All	X	X	X	X
Sensitive Plants BOT-2	Maintain current road width (15 feet) – do not widen road beyond the existing prism without first consulting the botanist. Use parent	Section 2130(g). Road Maintenance.	Roads 31000-145,		X	X	

Roads	material for road surface; do not add aggregate. Where feasible, avoid blading road surface within SMAs. Do not subsoil in SMAs. Avoid travel outside of roadbed, especially in SMAs. Do not locate turnouts or park within SMAs. Avoid side-casting in SMAs. Clean equipment used to improve roads before entry to ensure invasive species are not introduced to SMAs.		31000-158, and 31000-160				
Sensitive Plants BOT-3 **Road Maintenance**	Do not locate turnouts or park within SMAs. Where feasible, avoid blading within SMAs. Avoid side-casting in SMAs. Clean equipment used to build roads before entry to ensure invasive species are not introduced to SMAs.	Section 2130(g). Road Maintenance.	Temp Roads T1 and T7		X	X	
Sensitive Plants BOT-4 **Roads**	Limit travel to periods with dry soil conditions. Limit vehicle types to passenger/light-duty trucks or UTVs. Avoid travel and parking outside existing road prism. Upon project completion, botanist will evaluate the need for seeding to promote vegetation recovery.	Section 2130(g). Road Maintenance.	Roads 31000-155 and 31000-159		X	X	
Sensitive Plants BOT-5 **Plant Populations**	If additional populations of sensitive species are discovered before or during project implementation, they will be evaluated by the botanist for site protection needs.	Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources.	All		X		X
Sensitive Plants BOT-6 **Surveys**	Surveys of selected high probability habitats for sensitive species will be conducted prior to implementation.		All				X
Sensitive Plants BOT-7 **Notification**	Prior to work commencing in or near botanical SMAs, the botanist will be notified to ensure compliance with design features.		All			X	X
Soils SR-1 **Ground Cover**	Retain as much fine (needles and duff) and coarse (less than 3 inches in diameter) woody material as possible while meeting fuel reduction objectives for erosion control and provide nutrient cycling. Minimum effective ground cover for slope breaks is presented in the table. Ground cover in year two is estimated based on the sites' ability to produce understory vegetation and duff (needle cast and leaf	Section 2320. Thinning Specifications	All		X	X	

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<td>accumulations). If year two is not possible to meet, year two cover should be met in year one with slash placement.

<table>
<tr><th>Slope Breaks</th><th colspan="2">Minimum % Effective Ground Cover</th></tr>
<tr><th></th><th>1st Year</th><th>2nd Year</th></tr>
<tr><td><8% Slope</td><td>20-30</td><td>30-40</td></tr>
<tr><td>8-35% Slope</td><td>30-45</td><td>40-60</td></tr>
<tr><td>35-50% Slope</td><td>45-60</td><td>60-75</td></tr>
<tr><td>>50% Slope</td><td>60-75</td><td>75-90</td></tr>
</table>
Targeted DSC: Erosion, Nutrient Cycling

References: Umatilla Forest Plan. 1990; Powers, et al. 2005.</td>
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<tr>
<td>Soils
SR-2
Slash Piles</td>
<td>Where feasible, pile fuels (both hand and machine piles) on sites already disturbed by logging activities (old skid trails and landings). Avoid pile burning on shallow soils. Refrain from fuel piling above or below culverts or in drainages. When grapple piling, maintain forest floor cover and minimize mineral soil disturbance. Keep burn piles clean of mineral soil and rock (strive for <15% mineral soil composition per pile).
Construct machine piles on a base of larger logs with less coarse fuels placed perpendicularly on top to (1) increase air flow potential to dry woody material, (2) limit moisture wicking up from soil into the wood, (3) and limit potential soil impacts in areas where piles are burned. Base logs can be as small as 4 inches in diameter and still provide protection to the soil. This method has been shown to increase charcoal production leading to improved nutrient cycling. Construction time is comparable with other pile-building methods.</td>
<td>Section 2355. Ground Based Operations

Section 2560. Slash Disposal</td>
<td>All</td><td></td><td>X</td><td>X</td><td></td>
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<td>For large pile burning (>10 feet square), maintain 15 percent or less soil exposure in the pile burn area after completion.
These actions minimize effects on soil and keep Soil Burn Severity (SBS) at low to moderate levels.

 
Targeted DSC: Soil Burn Severity, Nutrient Cycling, Erosion

References: Page-Dumroese, et al. 2017</td>
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<td>Soils
SR-3
Waterbars</td>
<td>Reclaim machine-built fire lines by redistributing displaced topsoil and woody debris over the disturbed surface. Use large wood and slash as much as possible to prevent soil erosion. If necessary, due to slope or lack of woody material and slash, install water bars on fire lines, temporary roads, and skid trails with spacing indicated in the table. Water bars should be cut at an angle of 30-40 degrees and depth of 12-18 inches.

<table>
<tr><th>Gradient</th><th>Water Bar Spacing</th></tr>
<tr><td><5%</td><td>200 ft</td></tr>
<tr><td>5-10%</td><td>150 ft</td></tr>
<tr><td>10-20%</td><td>100 ft</td></tr>
<tr><td>20-40%</td><td>50 ft</td></tr>
</table>
</td>
<td>Section 2360. Non-Project Roads and Landings.

Exhibit D. Waterbar Specifications</td>
<td>All</td>
<td></td>
<td>X</td>
<td>X</td>
<td></td>
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	<table><tr><td>>40%</td><td>25 ft</td></tr></table> Targeted DSC: Erosion, Nutrient Cycling						
Soils SR-4 **Shallow Soils**	Shallow Soils (less than 50cm deep) - Avoid ground activities (driving, skidding, and landing use) on shallow soils unless over snow of 18 inches or more or on top of slash >12-inches deep as approved by the sale administrator. If use of shallow soil areas is necessary, disturbance will be kept to edges of these features maintaining maximum natural soil productivity possible for the area. Restorative actions, such as seeding, mulching and/or adding nutrients (such as biochar) should be used to improve soil productivity in disturbed areas. Where applicable, scarifying surface soil horizons with low rock content can be used to break up compaction. Very shallow soils (less than 25 cm deep to bedrock) should be avoided for all parking, driving, skidding, and landing use. Restoration on these soils is difficult and usually not effective requiring hundreds of years to restore productivity. Use the Lithic Soils and Managing Operation Guide to assist in locating ground activities on shallow and very shallow soil. Targeted DSC: Compaction.	Section 2355. Ground Based Operations.	All		X	X	
Soils SR-5 **Soil Moisture**	Soil Moisture Conditions – Operate ground-based equipment when conditions are favorable to minimize detrimental soil effects such as displacement, linear compaction, puddling. Dry and frozen soil are the most favorable for avoiding these effects. Operating on slash mats (>12-inchs thick) can help mitigate detrimental effects. Dry soil conditions are when mineral soil between 2-6 inches are dry starting at the soil surface. Under dry conditions when soil structure is crushed resulting in wheel tracks 6 inches deep or more and extending for more than 10 feet or excessive dust occurs during activities, mechanical operation should stop until water is used to harden the surface or slash 3-6 inches deep is scattered to drive over. Frozen soil conditions are when	Section 2355. Ground Based Operations.	All		X	X	

	- soil is frozen to a depth of 6 inches or more - Soil is frozen 3 inches and covered with 10 inches or more by snow - Soil is not frozen but is covered with a combination of 14 inches of snow and slash mat of 10 inches - Moisture conditions do not result in rutting or puddling of soil. Operations during frozen conditions should stop when one of the following is met: - Machines break through frozen ground. - Equipment tracks sink half the width of the track below the soil surface with one or two passes. - Wheel tracks are greater than 6 inches deep for more than 5 feet long. - Mid-day temperatures rise above freezing and surface melt occurs. Follow other recommendations in the Soil Moisture vs. Texture Operability guide. Targeted DSC: Compaction, Displacement.						
Soils SR-6 **NCT**	In non-commercial thinning units, the use of low pressure (less than 8 psi) ground equipment off existing disturbances (skid trails, travel corridors, landings) is appropriate if equipment does not travel over the same ground more than twice and soil conditions are dry, snow-covered, or frozen. Mechanical equipment should travel over slash when available. Consult with soil scientist and heritage specialist when decompaction is needed. Targeted DSC: Compaction.		Not applicable				
Soils SR-7 **Temp Roads**	Temporary road placement on shallow soil should be kept at edges or sides of the area. 'User made roads' that are also used for temporary roads by the project shall block use, cover with slash, and scarify the temporary/user made road surface (when soil depth is deeper than 25 cm and not rocky or cobbly) at the end of use. If not, their disturbance will continue as detrimental soil conditions that persist in the future. Refer to Lithic Soils and Managing Operations Guide for further shallow soil activity direction.	Section 2355. Ground Based Operations. Section 2360. Non-Project Roads and Landings.	T1, T7, and T29 and most of temporary roads T6, T11, T15, T25, T26,		X	X	

	Targeted DSC: Compaction, Erosion Temporary roads traversing or are not on the edges of very shallow and shallow soil include parts of temporary roads T1, T7, and T29 and most of temporary roads T6, T11, T15, T25, T26, T27, T28, T33, T36, T38, and T40.		T27, T28, T33, T36, T38, and T40.				
Soils SR-8 **Skidding**	Design and locate skid trails and skidding operations spacing to minimize soil disturbance. For slopes less than 30-40%, skid trail spacing should be 50 feet for activities performed over slash mats and greater than 100 feet with regular ground-based operations, except when converging at landings or avoiding obstacles. Limit turns and pivots as much as possible. Trail spacing on tethered harvest units should be 50 feet and greater, except when converging at landings or avoiding obstacles. Avoid pivots and turns in tethered units. Locate skid trails to avoid concentrating runoff and provide breaks in grade. Targeted DSC: Compaction, Displacement, Nutrient Cycling, Erosion	Section 2355. Ground Based Operations.	All	X	X	X	
Soils SR-9 **Ground Based Equipment**	Appropriate ground-based equipment and slope recommendations: - Track and rubber-tired equipment activity not using tethered assist technology is limited to slopes less than 30-40%. Accessing short (<100 feet) discontinuous pitches without tethered assist technology on slopes exceeding this range should be discussed with a soil scientist or hydrologist but can be approved by the sale administrator. - Single passes with conventional felling equipment on 30 to 50% slopes are preferred over slash. Discuss soil stability with a soil scientist or hydrologist before sale administrator approval. - Landforms with sustained slopes >30-40% should use appropriate tethered equipment or skyline equipment for implementation to prevent excessive soil displacement and compaction. Targeted DSC: Compaction, Displacement, Erosion	Section 2355. Ground Based Operations.	All	X	X	X	

Soils SR-10 **Cable Operations**	Maintain proper suspension and cable angle during skyline logging by always maintaining at least one end off the ground while skidding. Stop cable logging if slopes do not allow for proper angle suspension of 45 degrees or more. Targeted DSC: Displacement		Not applicable				
Soils SR-11 **Mass Movement**	Avoid all ground-based activities that will trigger new or additional movement in areas where mass movement characteristics are present. All or parts of activity units with mass movement identified **in the field during implementation** will be avoided, or treatments will be altered to maintain stability of the landform. Current and recent climate conditions play a significant factor in determining possible treatment actions. Contact a soil scientist or hydrologist for questions moving forward in areas where mass movement characteristics are observed. **A GIS review of LiDar found no activity units with distinctive mass movement characteristics.** Targeted DSC: Erosion		Not applicable				
Soils SR-12 **Existing Infrastructure**	Use existing roads, skid trails, and landings as much as possible. - Where temporary roads are needed place them on deep soil (>50 cm thick) as much as possible. Scarify and place slash on temporary roads to discourage reuse and help soil forming factors return the area to background soil productivity. - Skid trails on soil >50 cm thick should be scarified and scattered with slash when ruts exceed 6 inches. New skid trails visible from roads or recreation areas should be scarified and seeded or covered with slash if seed is unavailable. - Existing landings on soil >50 cm thick should be scarified (de-compacted), scattered with slash or burned wood/charcoal, and seeded after use. Targeted DSC: Compaction, Displacement, Erosion	Section 2360. Non-Project Roads and Landings.	All		X	X	

Vegetation VM-1 **21" Trees**	Avoid damaging or cutting down all live trees ≥ 21" dbh that currently exist within stands proposed for harvest activities unless deemed a safety hazard and/or approved by the sale administrator.	Section 2320. Thinning Specifications.	All		X	X	
Vegetation VM-2 **Damaged Trees**	Damaged trees that do not meet merchantability specifications shall be felled and either piled or scattered.	Section 2260. Reserved Timber – Damages.	All		X	X	
Vegetation VM-3 **Special Species**	Retain all pacific yew and deciduous species.	Section 2320. Thinning Specifications.	All		X	X	
Vegetation VM-4 **Subalpine Fir**	Retain 1-5 (average of 3) healthy, vigorous subalpine fir per acre, showing minimal signs of balsam woolly adelgid damage, if available.	Section 2320. Thinning Specifications.	All		X	X	
Vegetation VM-5 **Silv Rx**	In all units, manipulate vegetative structure in such a manner that moves forested stands towards late and old structural conditions in accordance with the Silvicultural Prescription.	Section 2320. Thinning Specifications.	All		X	X	X
Hydrology WQ-01 **RHCA Definitions**	Stream and riparian protection is based on the Forest Plan as amended by PACFISH. PACFISH standards and guidelines related to timber harvest and roads apply to this project and are incorporated by reference (TM-1, RF-1, RF-2, RF-3, RF-4, RF-5, RA-2, RA-4, RA-5, FM-1). **Category 1 - Fish-bearing streams:** RHCAs consist of the stream and the area on either side of the stream extending 300 feet slope distance from the edges of the active stream channel. **Category 2 - Perennial non-fish-bearing streams:** RHCAs consist of the stream and the area on either side of the stream extending 150 feet slope distance from the edges of the active stream channel. **Category 3 - Ponds, lakes, reservoirs, and wetlands greater than 1 acre:** RHCAs consist of the body of water or wetland and the area to the outer edges of the riparian vegetation, or the extent of the seasonally saturated soil, or 150 feet slope distance from the edge of the maximum pool elevation of constructed ponds and reservoirs or from the edge of the wetland, pond or lake, whichever is greatest.	Section 2415. Protection of Watershed. Section 2355 (f). Ground-Based Operations.	All	X	X	X	

<table>
<tr>
<td></td>
<td>Category 4 - Seasonally flowing or intermittent streams, wetlands less than 1 acre, landslides, and landslide-prone areas: This category includes criteria with high variability in size and site-specific characteristics. At a minimum the RHCAs must include: the area from the edges of the stream channel, wetland, landslide, or land-slide prone area to a distance equal to 100 feet.
The project area contains the following RHCAs:
Streams
<table><tr><th>Category</th><th>Miles</th><th>Acres</th></tr><tr><td>1</td><td>4.3</td><td>313</td></tr><tr><td>2</td><td>26.9</td><td>978</td></tr><tr><td>4</td><td>84.7</td><td>2054</td></tr></table>Wetlands
<table><tr><th>Category</th><th>Acres</th></tr><tr><td>4*</td><td>5</td></tr><tr><td></td><td></td></tr></table>*26 springs</td>
<td></td><td></td><td></td><td></td><td></td><td></td>
</tr>
<tr>
<td>Hydrology
WQ-02
Trees in RHCAs</td>
<td>Trees may be felled in RHCAs when they pose a safety risk. Keep all trees on site to meet woody material objectives. Directionally fell danger trees within RHCAs into stream channels and parallel to slopes within RHCAs to help detain sediment, if possible and safe for fallers. When trees within RHCAs are felled and obstruct the operation of other contracts (haul route), that portion of the tree causing the obstruction may be removed to clear the obstruction, but all material must remain within the RHCA.</td>
<td>Section 2415 (d). Protection of Watershed.

Section 2240. Reserved Timber – Trees and Snags.</td>
<td>All</td><td></td><td>X</td><td>X</td><td></td>
</tr>
<tr>
<td>Hydrology
WQ-03
Operational Areas</td>
<td>Locate transportation facilities for mechanical vegetation treatments, including temporary roads, staging/fueling areas, landings and skid trails outside of RHCAs to the extent practicable. Sale administrator would coordinate with watershed specialist to develop site-specific BMPs for temp roads that could not avoid being located in RHCAs.
Fuel will not be stored within any RHCA. Refueling, repair, and maintenance of equipment will be done at landings or on forest roads outside of RHCAs.</td>
<td>Section 2415. Protection of Watershed.</td>
<td>All</td><td></td><td>X</td><td>X</td><td></td>
</tr>
</table>

Hydrology WQ-04 **Spills**	Timber sale purchaser will prepare a spill containment plan that will ensure that spilled fuel will not leave the site. Fuel will not be stored within any RHCA. Refueling, repair, and maintenance of equipment will be done at landings or on forest roads outside of RHCAs.	Section 1340. Hazardous Substances Generated /Aggravated by Purchaser.	All		X		
Hydrology WQ-05 **Sediment**	Commercial use of roads shall be suspended when commercial contract or permit operations create movement of sediment into live streams. This may be from pumping of saturated fines creating sediment laden water on and/or from the road surface. Visual evidence of this may be identified by the increase in turbidity in live running streams evident at points downstream from the outflows of culverts, ditches, or fords (Umatilla NF Road Use Rules).	Section 2130. Road Maintenance.	All		X	X	
Hydrology WQ-06 **Road Maintenance**	Road maintenance would not be done when surfaces are saturated or runoff occurs, to minimize erosion and sedimentation. Where the proposed haul routes encounter wet areas (streams, springs, seeps, wetlands), new drainage structures and/or surface rock will be installed to minimize sedimentation to streams. When grading roads, do not cut the toe of the slope.	Section 2130. Road Maintenance.	All		X	X	
Hydrology WQ-07 **Side Casting**	During road maintenance and snow plowing side casting of materials will not occur where these materials could be directly or indirectly introduced into a stream, or where the placement of these materials could contribute to the destabilization of the slope.	Section 2130. Road Maintenance.	All		X	X	
Hydrology WQ-08 **Preventive Maintenance**	Conduct regular preventive road maintenance, including during times of haul, to avoid deterioration of the road surface and minimize the effects of erosion and sedimentation.	Section 2130. Road Maintenance.	All		X	X	
Hydrology WQ-09 **Waste Materials**	Slough and waste materials removed during road maintenance activities, including ditch and culvert cleaning, will be deposited in approved disposal areas outside of RHCAs. For erosion control and stabilization the disposal site will be seeded with native species.	Section 2130. Road Maintenance.	All		X	X	

Hydrology WQ-10 **Ditches**	Ditches will only be maintained where the water captured by the ditch is not able to be transported to the adjacent drainage structure that carries the water across the road. Existing vegetation in unobstructed ditches shall not be disturbed.	Section 2130. Road Maintenance.	All			X	
Hydrology WQ-11 **Closing Roads**	Prior to closing roads, use suitable measures to ensure that surface drainage will intercept, collect and remove water from the closed road surface and surrounding slopes in a manner that minimizes concentrated flow and erosion on the road surfaces without frequent maintenance.	Section 2360. Non-Project Roads and Landings.	All		X	X	
Hydrology WQ-12 **Ephemeral Streams**	Ephemeral Streams: a) Harvest systems will be designed to minimize crossing ephemeral draws. b) Ground based equipment will only cross ephemeral draws and channels at sites pre-approved by the responsible Forest official, and crossings will be minimized. c) Ephemeral draws will not be crossed where equipment will cause bank breakdown. Woody debris or rock may be placed into crossings to reduce soil disturbance and compaction. d) Ephemeral stream channels will not be used as forwarder trails, landing sites, or as road locations. All embedded wood will be retained. Other wood will be retained as specified in project design criteria for Wildlife.	Section 2355. Ground-Based Operations.	All	X	X	X	
Hydrology WQ-13 **Decommissioning**	The following design criteria will be used for temporary road obliteration: a) Where decommissioning crosses draws or channels, work will be done when channels are dry. b) Draws will be contoured to match upstream and downstream channel features including: gradient, active channel width and channel cross-section dimensions, and floodplain width.	Section 2360. Non-Project Roads and Landings	All		X	X	

	c) Re-contoured draws will be seeded with local, weed free native seed and mulched with on-site material or weed free straw or hay. d) Roadbeds will be de-compacted and drained as necessary to prevent erosion. e) Where full re-contour does not occur, remaining fill will be stabilized. f) Where re-contouring occurs, reconnect the surface of the cut bank slope with the re-contoured fill slope						
Wildlife WR-1 **Hiding Cover**	Where possible, retain 10% of each treatment area in a denser understory "thicket" condition consisting of ¼-½ acre conifer patches distributed across the unit. Purpose to provide adequate foraging/breeding habitat for migratory songbirds and small mammals and to provide hiding cover for deer and elk.	Section 2320. Thinning Specifications.	All		X	X	
Wildlife WR-2 **Wildlife Corridors**	Wildlife corridors should retain overstory canopy closure in the upper third of site potential in addition to scattered understory patches, to provide elk cover and old forest connectivity. Minimum corridor width will be 400' inclusive of adjacent RHCA's. Wider corridors may be identified where not in conflict with other resource objectives.		ODF Units 3, 8, 21, 33, 34, 43, 46, 49, 57, 63			X	X
Wildlife WR-3 **Snag Retention**	**All snags > 20 inches DBH and all standing soft snags will** remain uncut unless they are a hazard to workers. If no snags > 20 inches are available, retain the representative DBH of the overstory layer.	Section 2240. Reserved Timber - Trees and Snags.	All		X	X	
Wildlife WR-4 **Snag Retention**	All functioning existing snag habitat (broken top, signs of excavation, etc.) would be retained wherever possible.	Section 2240. Reserved Timber - Trees and Snags.	All		X	X	
Wildlife WR-5 **Tree Retention**	Retain an average of 16 green trees >14" DBH per acre.	Section 2320. Thinning Specifications.	All		X	X	

<table>
<tr>
<td>Wildlife
WR-6
Down Logs</td>
<td>If available, down logs per acre will meet or exceed numbers in the table below.
<table>
<tr><th></th><th>Ponderosa pine</th><th>Mixed conifer / grand fir</th><th>Lodgepole pine / Subalpine zone</th></tr>
<tr><td>Down Wood Pieces</td><td>3 – 6</td><td>15 – 20</td><td>15 – 20</td></tr>
<tr><td>Diameter at small end</td><td>> 12 in</td><td>> 12 in</td><td>> 8 in</td></tr>
<tr><td>Length per piece</td><td>> 6 feet</td><td>> 6 feet</td><td>> 8 feet</td></tr>
<tr><td>Total length</td><td>> 20 feet</td><td>> 100 feet</td><td>> 120 feet</td></tr>
</table>
</td>
<td>Section 2320. Thinning Specifications.</td>
<td>All</td><td></td><td></td><td>X</td><td></td>
</tr>
<tr>
<td>Wildlife
WR-7
Mastication</td>
<td>Avoid masticating non-conifer shrubs. Minimize injury/disturbance to willow, alder, ocean spray, huckleberries and other non-target plant species.</td>
<td>Section 2320. Thinning Specifications.</td>
<td>All</td><td></td><td>X</td><td>X</td><td></td>
</tr>
<tr>
<td>Wildlife
WR-8
Unique Habitat Features</td>
<td>Unique wildlife habitats such as seeps, springs, fens, wallows, swamps, cliffs, talus, boulders, lithosols, milkweed populations and caves will be protected by minimizing ground disturbance to maintain microsite conditions 100 feet from the area, with variances determined by specialists. Lithosol (scab flats) and meadows are unique wildlife habitat and will not be used for roads, landings, slash piles, fire lines, and skid trails unless no other location is practical.</td>
<td>Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources.

Section 2355. Ground Operations.</td>
<td>All</td><td>X</td><td>X</td><td>X</td><td></td>
</tr>
<tr>
<td>Wildlife
WR-9
Road Closures</td>
<td>Where harvest or other vegetation activity occurs adjacent to a road closure feature such as a gate, berm, or other similar device, retain sufficient stem density to substantially deter unauthorized motor vehicle access beyond closure point.</td>
<td>Section 2365. Progressive Operations.</td>
<td>All</td><td></td><td>X</td><td>X</td><td></td>
</tr>
</table>

Wildlife WR-10 **Raptors**	Protect known or discovered raptor nest sites from management and human disturbances until fledging has been completed. Level of protection will vary by species and will be recommended by the District wildlife biologist.	Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources.	All		X		X
Wildlife WR-11 **Goshawks**	Protect goshawk nests from disturbance if any are located during project activities. Defer harvest on 30 acres of the most suitable nesting habitat around nest sites.	Section 1640. Protection Measures Needed for Plants, Animals, Cultural Resources, and Cave Resources.	All		X		X